Destination 2030: SCAG's Draft 2004 Regional Transportation Plan

Attachment #4.1

TCC Agenda
Supplemental Item
October 2, 2003

REPORT

DATE: October 2, 2003

TO: Transportation & Communications Committee

FROM: Rich Macias, Manager of Planning and Programming
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RE: Supplemental Staff Report relative to Draft 2004 Regional Transportation Plan (RTP), "Destination 2030"

EXECUTIVE DIRECTOR'S APPROVAL:

RECOMMENDED ACTION:

Approve staff recommendation to release the Draft 2004 RTP "Destination 2030" for public review and comments.

BACKGROUND:

The 2001 RTP was adopted by the Regional Council in April of 2001. State and federal law require that the RTP be updated every three years in federally designated non-attainment regions such as ours. The current update process began shortly after the adoption of the 2001 RTP.

The focus of the Draft 2004 RTP is the integration of our growth vision into our transportation Planing. The Plan development has entailed analyzing numerous growth scenarios, including the five growth scenarios approved by CEHD in May of this year for further evaluation, leading to the proposed strategy that will be documented in the Draft 2004 RTP. The transportation revenue forecast and proposed plans and programs have been adjusted to reflect the latest information available consistent with the proposed vision.

This memo summarizes all the elements of the Plan by each chapter.

CHAPTER 1: WHY UPDATE THE 2001 RTP?

The Southern California Associations of Governments (SCAG), the federally-designated Metropolitan Planning Organization (MPO) for six counties in southern California, presents Destination 2030, the update of the Regional Transportation Plan (RTP). Destination 2030 establishes a transportation vision for an area that includes Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial counties, the home of 17 million people. The transportation plan is the culmination of a three-year effort with a focus on improving the balance between land use and the current and future transportation system.

Purpose and Need

The purpose of the 2004 RTP is to present a transportation plan that has regional consensus due to its flexibility and recognition of the unique nature of the region, yet also meets federal and state requirements. The RTP must meet a number of requirements, one of which is that it cover a period of at least 20 years into the future. The 2004 RTP covers the period 2004-2030. Transportation investments in the SCAG region, which receive federal transportation funds must be consistent with the RTP and must be included in the Regional Transportation Improvement Program (RTIP) when ready for funding. The RTIP is the programming document for funds, complements the corresponding years of the RTP, and must be updated every two years. SCAG's RTIP is a six-year program and is coordinated with the State Transportation Improvement Program (STIP) every two years.

Our Successes

Since the adoption of the 2001 RTP in April 2001, we have made progress in a number of areas. Our successes in implementing the Plan are described briefly in the following sections.

- **Transportation Funding Initiatives**

When the SCAG Regional Council adopted the 2001 Regional Transportation Plan, a commitment was made to fund a $144 billion program of transportation improvements in Southern California. A funding strategy was included with the Plan to ensure that the necessary revenue would honor the Regional Council's commitment. Two elements of the 2001 RTP funding strategy have already been implemented:

  - ❖ The dedication of revenues derived from the state sales tax on gasoline for transportation purposes (Proposition 42)

- ❖ Riverside County's reauthorization of its local sales tax (Measure A).

- **Plan Implementation**

  Since the adoption of the 2001 RTP, several regionally significant projects have been completed, including a number of HOV Gap Closure projects, several new Rapid Bus Corridors, extension of I-210, Metro Gold Line to Pasadena, and enhancement of Metrolink services including addition of several new stations.

What Adjustments Do We Need to Make?

The following section briefly highlights the adjustments to the 2001 RTP necessary in developing the 2004 RTP.

- **Adjustments to Growth Forecast**

  The 2004 RTP growth forecast updates the 2001 RTP growth forecast for the region and small areas, and is developed by five-year increments from the years 2000 to 2030. A major difference between the 2001 growth forecast (adopted in April 2001) and the 2004 growth forecast is a change in the forecast horizon from 1997-2025 to 2000-2030.

  The 2004 RTP growth forecast depicts more accurately the long-term demographic and economic picture of the SCAG region, including small areas (transportation analysis zones, TAZ) by incorporating recently available information from international, federal, state statistical agencies, and subregions/local jurisdictions.

- **Incorporating a Growth Vision**

  In the process of updating the 2001 RTP, SCAG made several adjustments to the socio-economic projections based on newly available data and recent trends observed at that time. The results of those adjustments, when analyzed through the transportation model were surprising. SCAG found that by changing the distribution of growth within the region, there were dramatic effects on the performance of the transportation system. In fact, a reduction in regional population and employment of 1 million, and a reallocation of jobs to Los Angeles County from elsewhere in the region reduced ROG by 8 tons, vehicle miles traveled (VMT) by 4.4%, and hours of delay by 21%.

- **Adjustment to Airport Strategy**

  The 2001 RTP was adopted just months before the September 2001 terrorist attacks, which caused an unprecedented upheaval in the aviation industry. This turmoil was exacerbated by the recent economic downturn that placed added pressures on airlines and airports struggling to cope with an entirely new operating environment. In

addition, new security requirements and traveler concerns have changed air traveler behavior in choosing airports/airlines.

In addition, a number of specific adjustments had to be made to reflect several factors, including, voter initiative in Orange County to reject a commercial airport in El Toro, amendment of John Wayne Airport Settlement agreement which could raise the legally enforceable capacity to 8.4 million annual passengers, LAX Master Plan release, and initiation of a master plan for Palmdale Airport.

- **Adjustment to the Revenue Forecast**

Under the guidance of the Highway and Transportation Finance Task Force, the financial model has been updated. A number of adjustments have been incorporated, including, moving the base and horizon years, adjusting revenues to reflect new growth data, adding Proposition 42 and Riverside's Sales Tax extension and Transportation Uniform Mitigation Fee (TUMF) revenues in the baseline.

- **Adjustment to Plans and Program**

A number of events have occurred since the adoption of the 2001 RTP that require revisions to some of the transportation investments included in the 2004 RTP. These adjustments ensure that the RTP accurately reflects current conditions and stays up-to-date with local transportation planning decisions, including those of the CTCs. Some of these adjustments include, revision to Center Line Project in Orange County, transfer of SR-91 Express Lanes to OCTA, accelerated implementation of Rapid Bus Program, and identification of CETAP corridors in Riverside County.

- **Operation Jump-Start**

Operation Jump-Start is a broad new initiative that will move the SCAG region forward through investment in critical infrastructure that will expedite surface transportation projects, enhance goods movement and revitalize the Southland's position through public/private partnership. Jump-Start incorporates several rail and truck capacity improvement projects, as well as the Maglev system, which were included in the adopted 2001 RTP. Jump-Start includes the utilization of low-cost financing instruments to stimulate private sector involvement. Jump-Start is designed to expedite project planning for implementation by the year 2010.

CHAPTER 2: OUR VISION

Regional Goals

Figure 1 – RTP Goals

Adopted 2004 RTP Goals	
1	*Maximize mobility and accessibility for all people and goods in the region*
2	*Ensure travel safety and reliability for all people and goods in the region*
3	*Preserve and ensure a sustainable regional transportation system*
4	*Maximize the productivity of our transportation system*
5	*Protect the environment, improve air quality and promote energy efficiency*
6	*Encourage land use and growth patterns that complement our transportation investments*

Guiding Policies

Figure 2 – RTP Policies

Adopted 2004 RTP Policies	
1	*Transportation investments shall be based on SCAG's adopted Regional Performance Indicators.*
2	*Ensuring safety, adequate maintenance, and efficiency of operations on the existing multi-modal transportation system will be RTP priorities and will be balanced against the need for system expansion investments.*
3	*RTP land use and growth strategies that differ from currently expected trends will require a collaborative implementation program that identifies required actions and policies by all affected agencies and sub-regions.*
4	*HOV gap closures that significantly increase transit and rideshare usage will be supported and encouraged, subject to Policy #1.*

Performance Expectations

Figure 3 – RTP Performance

Performance Outcomes, Measures, and Plan Objectives

Performance Outcome	Performance Measure(s)	Definition	Performance Objective
Mobility	• Speed • Delay	Speed - experienced by travelers regardless of mode Delay – excess travel time resulting from the difference between a reference speed and actual speed. Total daily delay and daily delay per capita are the indicators used.	Average daily speeds improve by 11 percent Average daily delay improves by 37 percent
Accessibility	• % PM peak period work trips within 45 minutes of home • Distribution of work trip travel times		Auto: 90 percent, 7 percent improvement Transit: 35 percent 6 percent improvement
Reliability	• % variation in travel time	Day-to-day change in travel times experienced by travelers. Variability results from accidents, weather, road closures, system problems and other non-recurrent conditions	10 percent improvement
Safety	• Accident rates	Measured in accidents per million vehicle miles by mode for: fatalities, injuries, and property damage	0.5 percent improvement
Cost Effectiveness	• Benefit to Cost (B/C) Ratio	Ratio of benefits of RTP investments to the associated investment costs.	3.73 benefit cost ratio
Productivity	• % capacity utilized during peak conditions	Transportation infrastructure capacity and services provided. • Roadway Capacity - vehicles per hour per lane by type of facility • Transit Cap. – seating capacity utilized by mode	20 percent improvement at known bottlenecks
Sustainability	• Total cost per capita to sustain current system performance	Focus is on overall performance, including infrastructure condition. Preservation measure is a sub-set of sustainability.	$20 per capita, primarily in preservation costs
Preservation	• Maintenance cost per capita to preserve system at base year conditions	Focus is on infrastructure condition Sub-set of sustainability.	Maintain current conditions
Environmental	• Emissions generated by travel	Measured/forecast emissions include CO, NOX, PM10, SOX, and VOC. CO2 as secondary measure to reflect greenhouse emissions	Meets conformity requirements

Planning Approach

- **Overview of Federal Requirements**

  Under TEA-21, the U.S. Department of Transportation (USDOT) requires that the MPOs prepare long-range transportation plans. SCAG adopted the 2001 RTP in April 2001. The 2004 RTP is an update to the 2001 RTP and it replaces the 2001 RTP in its entirety.

  Key Federal requirements are that the Plan be fiscally constrained, meet transportation conformity, and consider the seven planning factors provided by the federal government through TEA-21.

- **Overview of State Requirements**

  The State, whose requirements largely mirror federal requirements, has adopted extensive RTP guidelines. A key additional state requirement is that transportation plans must comply with the California Environmental Quality Act (CEQA). The 2004 RTP will meet those requirements. In addition, the first four years of plans must be consistent with the four-year STIP as incorporated into the SCAG RTIP.

- **SCAG's Plan Update Approach**

  This RTP focuses on linkages between land-use patterns and transportation investment decisions. Severe funding constraints coupled with difficulty in demonstrating transportation conformity as we move closer to the attainment year for the federal air quality standards require us to develop creative solutions to our transportation challenges.

  SCAG developed an integrated planning process called Planning for Integrated Land Use and Transportation (PILUT) to update the 2004 RTP. The idea is to integrate the transportation planning, growth visioning and the State-required Environmental Impact Report (EIR) analysis into a single, unified process. The objective is to eliminate redundancy, ensure close coordination, and optimize the use of available resources. In the past, the EIR alternatives were developed independent of the RTP alternatives. The PILUT process requires that a single set of alternatives be developed and evaluated that meet the EIR requirements, and at the same time are meaningful and informative alternatives for transportation implementation.

  In early May 2003, SCAG's Community, Economic and Human Development Committee directed staff to evaluate five growth scenarios. The first three scenarios were adjustments to technical projections based on local input and other technical considerations. The remaining two scenarios were growth visions called PILUT 1 and PILUT 2.

  PILUT 1 proposes intensification of land use in urbanized areas of the region to accommodate future growth so that more of our scarce, undeveloped land is

preserved and at the same time the existing transportation system is utilized more effectively, particularly our public transportation system.

PILUT 2 proposes accommodating future growth by encouraging the movement of people and employment to outlying areas, such as North Los Angeles and San Bernardino counties, and Eastern Riverside County (Coachella Valley), so that we achieve better job-housing balance and minimize the need for long commute trips.

The five scenarios, including the two PILUT visions, were evaluated. Using the lessons learned from the evaluation, SCAG staff developed a Hybrid Scenario that incorporates beneficial elements from each of the scenarios. The capital improvements needed to support the Hybrid Scenario were developed based on the 2001 RTP as well as input received from the transportation stakeholders through the project input process as well as task force and committee structures.

- **Public Outreach**

Along with an extensive process to engage public agencies in the update of the RTP, SCAG is to provide complete information, timely public notice and full public access to key decisions and to support early and continuing public involvement in developing its regional plans. This public involvement process is in accordance with Section 450.316(b) of the metropolitan planning regulations. SCAG formally adopted a Public Participation Program in September 1993. Further, Title VI of the Civil Rights Act of 1964 and associated regulations and policies, including President Clinton's 1994 Executive Order 12898 on Environmental Justice, seek to assure that minority and low-income populations are involved. To fulfill these expectations, SCAG is implementing a comprehensive outreach program.

CHAPTER 3: TRANSPORTATION PLANNING CHALLENGES

The focus of this chapter is a description of factors that pose significant challenges in the SCAG region. Provided is an in-depth description of growth trends and travel patterns that define the key challenges the Region faces in planning for the future.

How Will We Grow – The Regional Baseline Projection for 2030

The regional No-Project projection shows us what will happen in the region if recent population, household, and employment trends continue into future. The baseline shows that by the year 2030, the region will reach 22.9 million residents and 10.2 million jobs by adding 6.3 million people and 2.7 million jobs, respectively, between 2000 and 2030.

This forecast is slightly different from the baseline presented in the 2001 Regional Transportation Plan. Both household and population growth are expected to be less than previously forecasted. These adjustments reflect recent trends and critical input from local jurisdictions during the review process.

The following table summarizes No-Project growth versus proposed Growth Vision growth by county in terms of total population, households and employment.

Figure 4 – Regional Growth Baseline Projection

2004 RTP Final Population, Household, & Employment Growth in 2030: Baseline and Policy Forecast (in thousands)

County	Baseline Forecast			Policy Forecast			Difference (Policy minus Baseline)		
	Population	*Households*	*Employment*	*Population*	*Households*	*Employment*	*Population*	*Households*	*Employment*
Imperial	270	84	110	270	84	111	0	0	1
Los Angeles	12,316	4,079	5,557	12,316	4,135	5,679	0	56	122
Orange	3,553	1,098	1,922	3,553	1,161	2,039	0	62	108
Riverside	3,045	1,045	1,053	3,045	1,070	1,111	0	25	58
San Bernardino	2,713	842	1,071	2,713	877	1,138	0	35	68
Ventura	993	329	455	993	334	467	0	6	12
SCAG Region	**22,890**	**7,476**	**10,168**	**22,890**	**7,660**	**10,535**	**0**	**183**	**368**

Source: Baseline forecast - incorporating local input and review from 90% of cities and subregions.
Policy forecast - growth additions among counties based on the Jump Start

Meeting our TDM Goals

The 2001 Regional Transportation Plan envisioned coupling transit and non-motorized travel with ridesharing (carpooling and vanpooling) and encouraging people to work at home (e-commuting, telecommuting, teleworking, and building home-based businesses) to stem the tide of solo driving and the overall growth in vehicle miles of travel (VMT).

The 2002 State of the Region report indicates that the region's performance is mixed: VMT almost doubled between 1980 and 2000, total unlinked transit passenger trips increased seven percent over 1999 (up continuously since 1995) while bus miles decreased by one million in Los Angeles County (LA Times-September 8, 2003), the average journey to work travel time increased in every SCAG county with a regional average increase from 26 to 29 minutes, and the mode choice to work in the region remained essentially unchanged during the 1990s with 72% of workers driving to work alone.

Within the region, Los Angeles County has the lowest rate of workers who drive alone to work, while Orange and Ventura Counties have the highest rates. San Bernardino and Imperial Counties showed noticeable improvements in reducing the single-occupancy vehicle commute rate. In fact, the three inland counties had a higher rate of workers who carpooled to work than the three coastal counties.

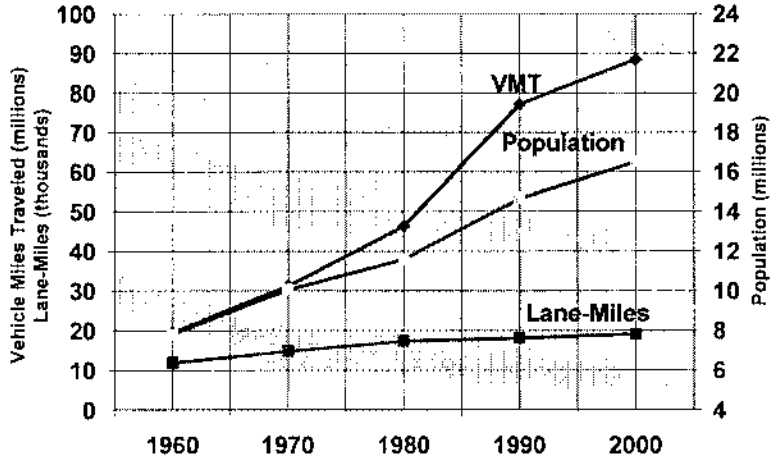
Unprecedented Demand on Our System

This section describes the challenges that each of our transportation system modes is likely to face in accommodating the impending growth is coming our way.

- **Highways and Arterials**

Both industry and residents are served by a vast transportation network that includes almost 20,000 lane miles of freeway, more than 36,000 lane miles of arterials, several large public transit systems, four major airports (including the world's fifth largest), as well as the second and third largest ports in the United States. Yet the Region's transportation system has not kept up with population and transportation demand. Figure 5 illustrates this point.

Figure 5 – Travel Supply, Demand, and Population Trends

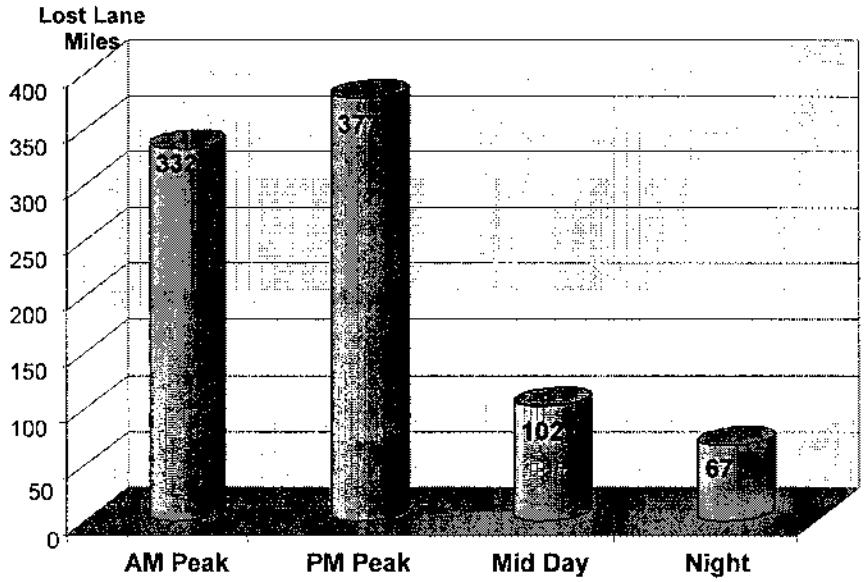


While population more than doubled from year 1960 to year 2000, our freeway miles increased by less than 30 percent. Consequently, our Region's congestion has increased dramatically affecting both person travel and goods movement.

For year 2000, total daily delay due to congestion is estimated to be 1.6 million hours. If current trends persist, this delay is expected to more than double to 3.6 million hours by the year 2030. Moreover, our infrastructure is aging and requires more maintenance and preservation investments.

The roadway system loses its productivity when it is unable to serve the number of vehicles that it is designed to serve. This occurs at major interchanges (or accident locations) that are often referred to as bottlenecks. The resulting lost productivity of the system typically occurs only during peak demand periods. So in effect, when demand is highest, we lose part of the system capacity. The following graph presents the results of an analysis based on real traffic counts around the Region's freeway system to estimate the lost productivity in the SCAG region for the morning and afternoon peak demand periods as well as mid-day and night periods. The "Lost Lane Miles" shows the equivalent lost capacity due to the lost productivity our system experiences.

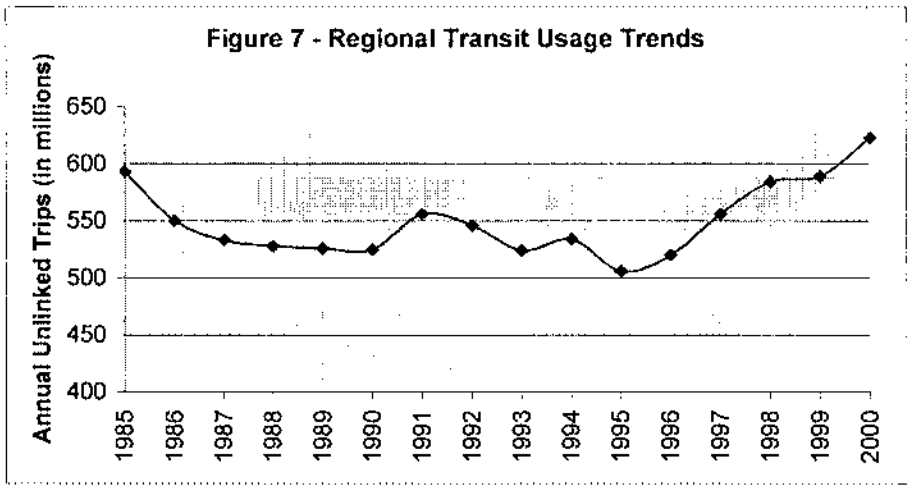
Figure 6 - Productivity Results Aggregated by Time Period



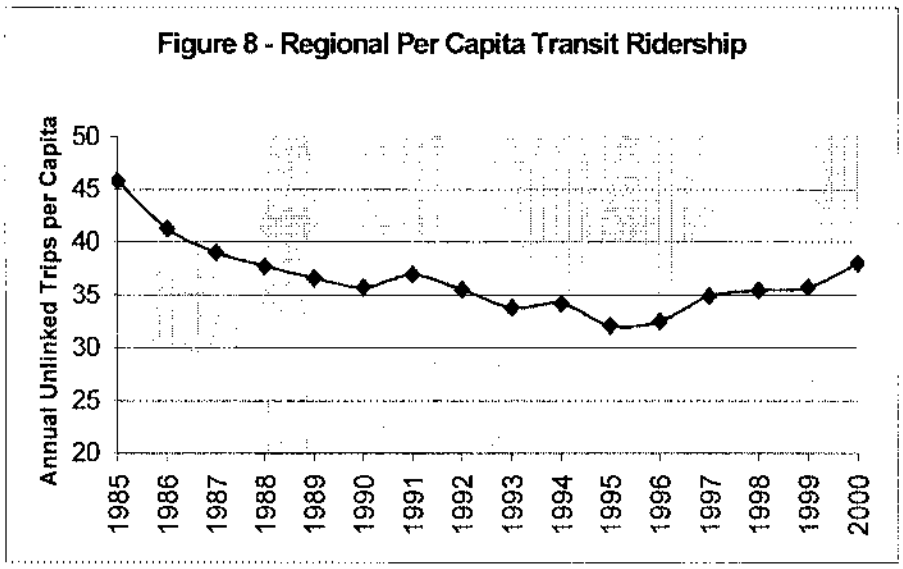
- **Public Transportation**

Starting in the early 1980s, the Region, and Los Angeles County in particular embarked on an aggressive path of transit system development. Many of these projects (e.g., Metro Blue Line, Red Line, Metrolink) have now been completed successfully and provide meaningful choices to the residents of this Region.

Yet even these critical projects did not reduce demand on our arterial and freeway systems. The figure below shows trend of transit usage in the Region from year 1985 to year 2000.



Transit ridership increases since 1995, once normalized with overall population growth, are somewhat less impressive. Figure 8 below shows transit trips per capita trends over the same period. On a per capita basis, the Region's transit ridership is still behind when compared to the 1985 levels.



Fortunately, some recent trends are more promising, especially as they relate to Bus Rapid Transit demonstration projects, including the Wilshire and Ventura Boulevard Rapid Bus projects.

Transit capacity as measured by available seat miles is generally less than 50 percent (except for Light Rail in Los Angeles). Although it is unlikely this figure will ever reach 100 percent utilization, Figure 9 clearly demonstrates the potential for productivity improvement for transit in the Region.

Figure 9 – Transit Service Utilization in the SCAG Region

Utilization of Transit Services in the SCAG Region					
County	*Commuter Rail*	*Demand Response*	*Heavy Rail*	*Light Rail*	*Bus*
Los Angeles	34%	11%	35%	59%	34%
Orange	n/a	13%	n/a		27%
Riverside		9%			26%
San Bernardino		12%			33%
Ventura		16%			22%

Another challenge facing transit service in the SCAG Region relates to the coordination of the many transit agencies operating in the Region. Many residents use more than one service and the coordination among these services is critical. Coordination includes schedule and fare payment methodology. Promising initiatives such as the Universal Card in Los Angeles, allow transit users to utilize the same payment method regardless of which transit service they choose.

The cost of transit is also placing a large burden on the Region's finances. Subsidizing transit is common place across the nation. There are no significant transit operators that are self sufficient and do not require some level of subsidy. However, the SCAG Region's subsidy levels can be reduced. Figure 10 presents the summary of fares as a percent of total funding in the SCAG Region by county, which ranged between 21 percent and 42 percent in year 2000 for the five counties that provide significant transit services. This means that subsidies ranged from 58 percent to 78 percent of total costs. To pay for these subsidies, every person in the Region pays between $12 and $77 annually.

Figure 10 – Transit Subsidy in the SCAG Region

Transit Subsidy in the SCAG Region						
County	*Population 2000*	*Total Person Trips 2000 (Transit & Non-Transit*	*Public Subsidy*	*Total Funding*	*Farebox Recovery*	*Annual Public Subsidy per Capita*
Los Angeles	9,576,497	31,588,516	$ 736,551,358	$ 1,099,911,627	33%	$ 76.91
Orange	2,864,196	10,499,600	$ 66,530,050	$ 124,940,750	42%	$ 23.23
Riverside	1,525,325	4,896,121	$ 30,651,986	$ 38,892,369	21%	$ 20.10
San Bernardino	1,696,904	5,475,741	$ 27,783,603	$ 39,845,344	30%	$ 16.37
Ventura	758,096	2,721,417	$ 9,289,979	$ 11,900,218	22%	$ 12.25

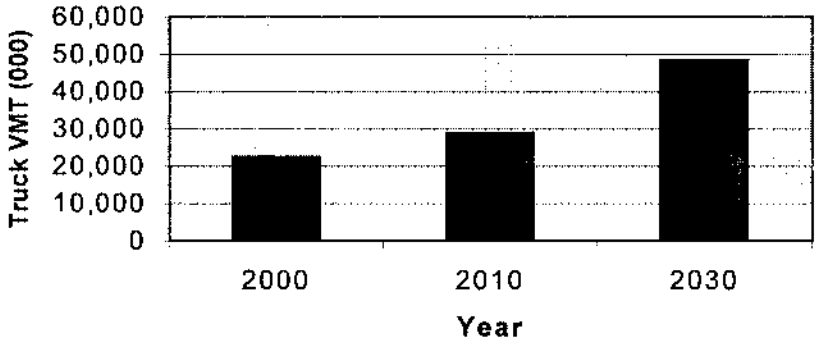
- **Goods Movement**

The Southern California region is facing a crisis in goods movement transportation, characterized by a dramatic growth in rail and truck traffic, limited transportation funding, and high infrastructure improvement costs. Forecasts of greater regional population and employment, and projections of increasing international and domestic trade volumes, all lead to worsening congestion and the potential of gridlock occurring within the region's surface transportation system.

Truck Travel

Almost all of the short haul and a significant share of medium and long haul movement of goods occur by truck. For the most part, trucks share our roadway network with other vehicular traffic. Figure 11 depicts projected growth in truck vehicle miles traveled.

Figure 11 – Truck Travel Trends



Freight Rail

Freight rail is critical to the SCAG region. It helps alleviate the truck demand on our roads, provides the Region with a competitive advantage for the overall logistics industry, and provides a means for the Region to import and export its goods in a cost effective manner.

Rail transportation services for goods movement are provided in the SCAG region along five principal rail alignments. These alignments are each owned by the two Class 1 railroads operating in the region: the Union Pacific Railroad (UP) and the Burlington Northern Santa Fe (BNSF). The majority of freight rail operations move along the main-lines of each railroad—the San Bernardino Subdivision between Barstow and downtown Los Angeles for BNSF, and the Los Angeles Subdivision and Alhambra Subdivision for UP.

The next table shows that East-West rail freight demand is projected to more than double by the year 2030. This calls for additional freight rail improvements to ensure that truck traffic does not grow even faster and that the freight rail industry can provide its services in an efficient and safe manner.

Figure 12 – East-West Freight Rail Trends

East-West Corridor Train Forecast
(Average Daily Trains)

	2000	*2010*	*2030*
Freight	112	165	283
BNSF	57	80	136
UP	55	85	147
Passenger	58	100	158
BNSF	46	75	113
UP	12	25	45
Total – All Trains	170	265	441

Source: SCAG, LA – Inland Empire Railroad Mainline Advanced Planning Study, 2002)

- **Marine Ports and Waterways**

International trade through the Los Angeles Customs District is expected to nearly triple from $230 billion to $661 billion between the years 2000 and 2020. The deepwater ports of Los Angeles and Long Beach constitute a significant portion of the trade activities in this district, and, together with the third regional port of Hueneme, handle 80% of California's and 35% of the nation's waterborne international trade. These ports are planning to invest $6 billion over 25 years on an ambitious infrastructure development program that will include widening arterial streets, upgrading freeway ramp, separating railroad grade, expanding rail yards, and adding intelligent transportation systems (ITS) to improve ground access management. The challenge for the region is to manage and accommodate the anticipated growth in the port activities so as to maintain our strategic economic advantage as a region.

- **Airways**

Airports play an important role in goods movement, as air cargo is transportation in either passenger aircraft belly-holds or in dedicated freight aircraft used primarily for high value, time sensitive shipments. In 2002, the region's airports handled 2.6 million tons of air cargo.

Air Cargo Terminals

Regional air cargo has grown at an average annual rate of 6.6% since 1965. Los Angeles International and Ontario International are the major cargo handling airports, transporting about 96% of all regional air cargo, with LAX alone accounting for 75% of the traffic. Ontario air cargo traffic has increased by seven times since 1979, while LAX has doubled in the same period. Burbank, John Wayne and Long Beach handle substantially less cargo.

Figure 13 – Historical Air Cargo Trends

Historical Air Cargo Tonnage (x 000)							
	1975	*1980*	*1985*	*1990*	*1995*	*2000*	*2002*
Burbank	0	0	7	20	36	37	43
John Wayne	0	0	0	0	16	18	15
Long Beach	0	1	4	19	27	52	59
Los Angeles	715	882	929	1,284	1,761	2,249	1,959
Ontario	3	5	176	246	387	511	547
Palm Springs	0	0	0	0.4	0.2	0.1	0.1
Total	**718**	**887**	**1,116**	**1,570**	**2,227**	**2,867**	**2,623**

Another key issue is surface congestion. With the majority of regional air cargo only served by two airports, the ability of the already crowded surface transportation infrastructure to accommodate the air cargo demand is limited. To complicate matters, the San Diego region sends two-thirds of its air cargo to SCAG's regional airports for shipping. Orange County, which generates 30% of regional air cargo, provides service for less than 3% of this amount.

- **Passenger Aviation**

The SCAG Region has 57 public use airports, including six commercial service airports, 45 general aviation, two recently closed military air bases (one certified as a commercial service airport), two commuter airports and two joint-use facilities.

In all, some 78 million annual passengers (MAP) were served in the Region in 2002, almost double the number served in 1980. The level of air passenger demand is forecast to double again before 2030. While none of the individual airports is the largest in the U.S., the Region's airports taken together make Southern California the busiest of all regions in the country.

Figure 14 – Air Passenger Trends

Historical Annual Passengers (In Millions)							
	1975	*1980*	*1985*	*1990*	*1995*	*2000*	*2002*
Burbank	1.6	1.9	2.9	3.5	5.0	4.8	4.6
John Wayne	1.8	2.4	3.3	4.6	7.2	7.8	7.9
Long Beach	0.3	0.2	1.1	1.5	0.4	0.6	1.5
Los Angeles	23.7	33.0	36.3	45.9	53.9	67.7	56.2
Ontario	1.3	2.0	3.6	5.4	6.4	6.7	6.5
Palm Springs	0.3	0.5	0.6	0.9	0.9	1.3	1.1
Total	29.1	40.0	47.8	61.8	73.9	88.9	77.8

The economic costs of doing nothing are substantial. For every one million regional air passengers, it is estimated that there is a positive regional economic impact of $620 million (in 1998 dollars) and 4,475 jobs. SCAG estimates that under a fully constrained aviation system, only 141 million passengers would be served in 2030.

- **Non-Motorized Transportation**

  Providing mobility and safety for bicyclists and pedestrians in urban, suburban and rural areas presents obstacles unique to each environment. However, there are a number of key areas relevant to any environment, including:

  - ❖ Safety at points of contact with vehicular traffic
  - ❖ Access to schools and other public facilities where children are present
  - ❖ Requirements of the Americans with Disabilities Act (ADA)
  - ❖ Convenience and aesthetics.

Transportation Finance Challenges

- **Baseline Revenue versus Committed Expenses**

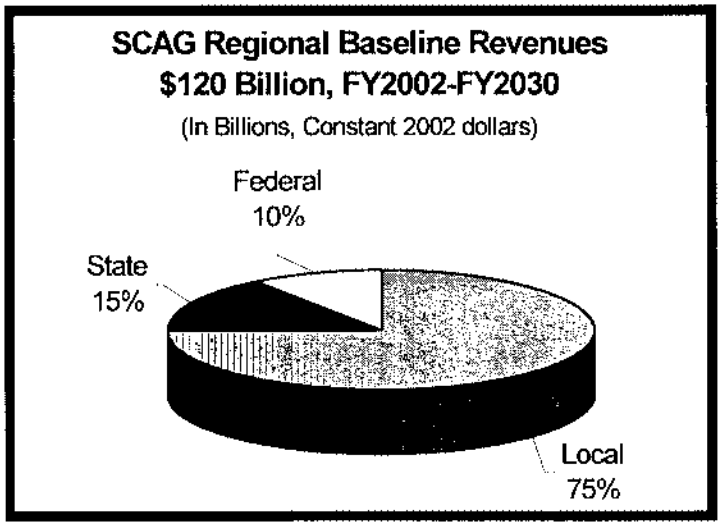
  Baseline Revenues

  After reviewing the economic and growth assumptions governing the various transportation revenue sources, the Highway and Finance Task Force approved several existing revenue sources, comprising local, state and federal funds for roadways and transit, as the Baseline forecast for the 2004 RTP.

  The Baseline revenue estimate for the six-county SCAG Region is $120 billion over the 29-year time horizon of the 2004 RTP. Local sources comprise 75 percent of the overall revenue forecast, with state sources totaling 15 percent and federal sources

making up 10 percent. The forecast falls short of funding all needed transportation projects in the region.

Figure 15 – Baseline Revenue



Committed Expenses

The major categories of committed expenses include: short-term capital projects currently programmed in the 2002 RTIP; operation and maintenance estimates for highways, the arterial system, and transit; as well as current debt service payments and debt issues anticipated by the local CTCs during the 2004 RTP timeframe. Comparing commitments with total available revenues helps to summarize the Region's committed expenses during the timeframe covered by the 2004 RTP. All committed expenses and revenue forecasts from 2002 through 2030 are adjusted to constant 2002 dollars using a 3 percent factor.

Figure 16 - Committed Regional Expenses
(in constant 2002 dollars, billions)

	Imperial	*Los Angeles*	*Orange*	*Riverside*	*San Bernardino*	*Ventura*	*Total*
TIP (Baseline & Tier 2)	$0.40	$13.65	$3.68	$1.57	$3.62	$0.64	$23.56
Highway O&M	$0.21	$3.39	$0.78	$0.58	$1.85	$0.31	$7.12
Arterial O&M	$0.08	$4.87	$2.30	$1.32	$2.07	$0.57	$11.22
Transit O&M	$0.10	$37.31	$4.69	$2.08	$2.77	$0.77	$47.72
Transit Rehab/Replacement	$0.00	$8.24	$1.00	$0.24	$0.30	$0.19	$9.96
Debt Service	$0.00	$11.93	$3.35	$0.24	$0.32	$0.00	$15.84
Total	$0.80	$79.39	$15.80	$6.03	$10.92	$2.48	$115.42

Note: Numbers may not add due to rounding.

Figure 17 - Committed Regional (in constant 2002 dollars, billions)			
Committed Cost Category		**Costs**	**Percentage**
TIP (Baseline & Teir 2	$	23.56	20%
O&M / Rehab & Replace	$	76.02	66%
Debt. Service	$	15.84	14%
Total	**$**	**115.42**	**100%**

Note: Numbers may not add due to rounding

Funding Shortfall

To assess the region's finances, the baseline revenues were compared to the committed expenditures. As the far right column in the table below illustrates, the region as a whole will have a relatively balanced revenue-to-cost forecast to operate, maintain and rehabilitate the current transportation system over the 2004 RTP period. However, on the county level, both San Bernardino and Los Angeles counties are projected to experience severe deficits.

Figure 18 – Baseline Funding Shortfall

Draft 2004 RTP Baseline Regional Balance by County (in constant 2002 dollars, billions)			
County	**Baseline Revenues***	**Committed Expenses**	**Net Balance**
Imperial	$1.05	$0.80	$0.25
Los Angeles	$76.01	$79.39	($3.38)
Orange	$20.50	$15.80	$4.70
Riverside	$12.09	$6.03	$6.06
San Bernardino	$8.00	$10.92	($2.92)
Ventura	$2.70	$2.48	$0.22
Regional Total	**$120.35**	**$115.42**	**$4.93**

Note: *Includes Riverside County local sales tax extension revenues, Transportation Uniform Mitigation Fee (TUMF) revenue, Proposition 42 revenues, and gas tax subvention revenues.

Ongoing Fiscal Challenges

The development of the 2004 RTP continues to involve the identification and analyses of potential fiscal challenges impacting the flow of transportation revenues to the SCAG region, particularly given current economic uncertainties. The most notable of these on-going challenges include, decline in gas tax revenue due to inflation, sunset of existing county sales tax, loss of revenue from reduced gasoline consumption to meet air quality mandates, aging population and escalation of operation and maintenance needs.

Figure 19 – Transportation Revenue, Demand, and Population Trends

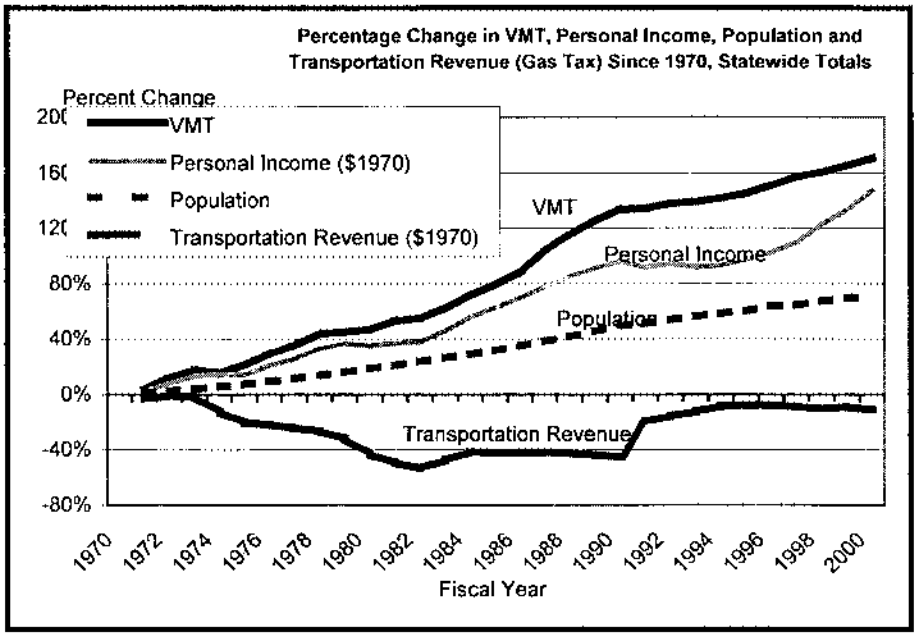
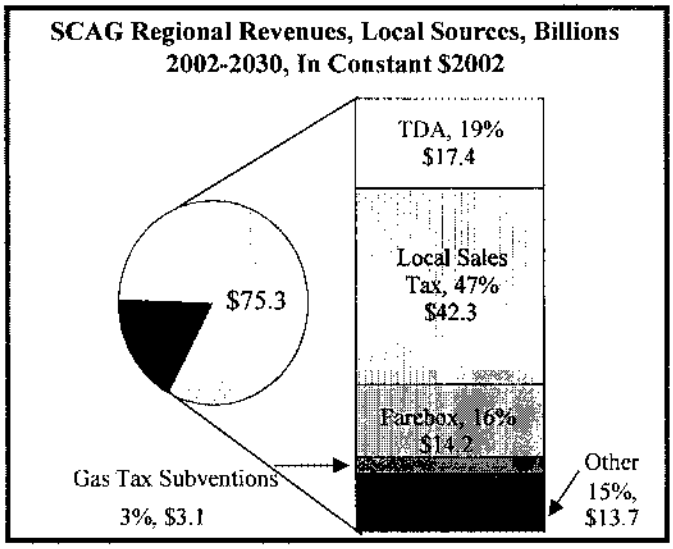


Figure 20 – Regional Revenue and Sources



- **Meeting our Air Quality Commitments**

The SCAG region has experienced cleaner and healthier air quality over the past two decades, due to collaborative efforts over the years to reduce emissions from stationary and mobile sources. However, even with these efforts, much of the region continues to exceed the National Ambient Air Quality Standards (NAAQS) and large portions of Southern California still have the worst air quality in the nation.

The South Coast Air Basin (SCAB) is classified as an "extreme" non-attainment area for ozone, and is required to meet the federal 1-hour ozone standard by 2010. The SCAB is also classified as a "serious" non-attainment area for particulate matter (PM10), and is required to meet the PM10 standards by 2006. In addition, the new federal standards for 8-hour ozone and fine particulate matter (PM2.5), currently in the process of being implemented, will require significant emission reductions beyond those required to reach the existing standards.

Previous air quality plans underestimated the air emissions inventory and targets, and the magnitude of the required emission reductions reported in the 2003 South Coast Air Quality Management Plan (SCAQMP) is far greater than that reported in previous air quality plans.

There are only a few years remaining to identify and achieve the emission reductions required for attainment. Failure to implement an adequate State Implementation Plan (SIP) could result in federal sanctions, such as a ban on approval of new highway projects and a loss of highway funding, as well as more stringent emission offsets for stationary sources.

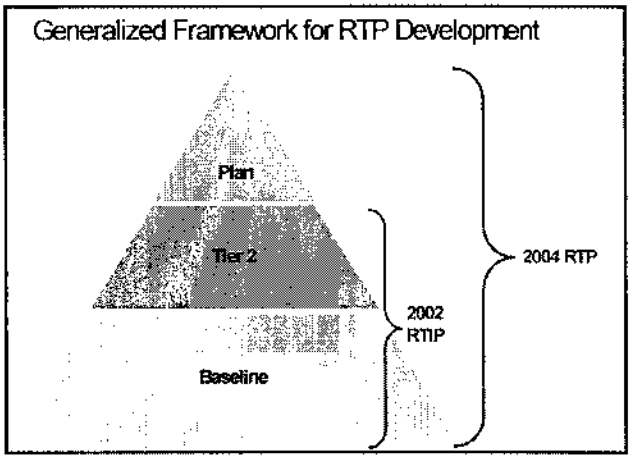
CHAPTER 4 POTENTIAL SOLUTIONS

This chapter describes key plans and programs that address the challenges outlined in Chapter 3 and the recommended funding strategy to meet the Region's needs and implement the 2004 RTP.

The structure of proposed projects and strategies that constitute the 2004 RTP is depicted in Figure 21. The Plan can be viewed as multiple layers, or tiers, of transportation projects and strategies, beginning first with the existing transportation system and ending with the proposed Plan improvements. These tiers are described as follows:

- Baseline represents a future scenario in which only projects in the 2002 RTIP that have Federal environmental clearance by December 2002 are assumed to be completed.
- Tier 2 describes the remaining committed projects in the 2002 RTIP that are not included in the Baseline scenario.
- Plan investments represent the final layer of transportation improvements, above and beyond Tier 2. These projects and strategies represent the focus of this chapter, and are discussed in detail.

Figure 21 – RTP Development Framework



From the long range planning standpoint, baseline and Tier 2 projects are considered as fully committed. The real discretion that the RTP process has is over the projects and strategies beyond Tier 2 that is represented by the small triangle on top of the pyramid.

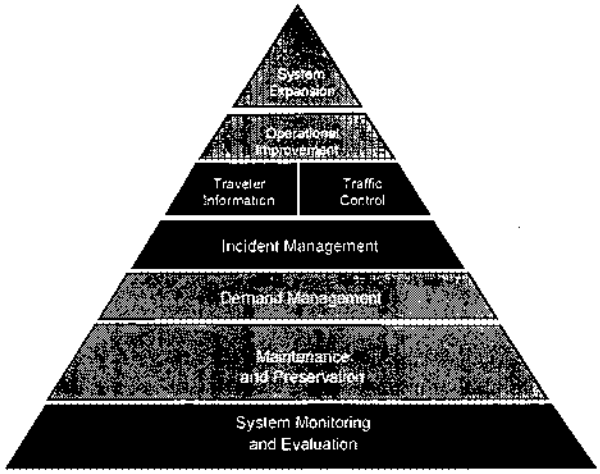
System Management -- Getting the Most out of the System

Given the challenges described in the previous chapter, the SCAG RTP relies on a number of strategies to address the Region's transportation needs. These range from an increased focus on operational strategies to land-use integration and to strategic system expansion investments.

- **System Management**

SCAG and its partners have embraced an overall system management philosophy that maximizes returns on expected transportation investments. This philosophy is depicted in a pyramid structure here.

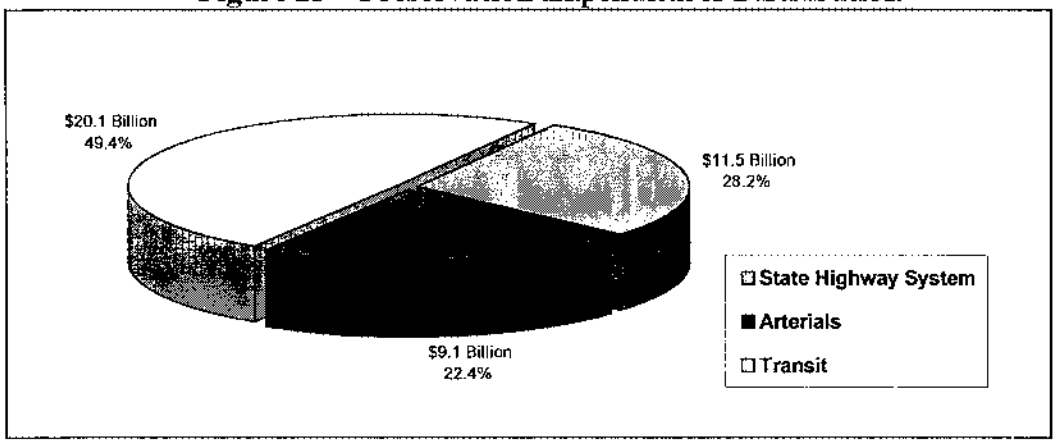
Figure 22 – System Management Philosophy



Preservation – Protecting our Infrastructure

A key aspect of System Management is protecting our investment in the current transportation infrastructure. The region has invested billions in developing its multi-modal transportation system and must protect these investments for current and future generations. The pie chart below summarizes these investments by the three primary modes: State Highway System, Arterials, and Transit.

Figure 23 – Preservation Expenditures Distribution



This RTP sets aside $6.6 billion of additional funds to infrastructure preservation. Figure 24 presents these incremental preservation investments over and beyond the Baseline by county.

Figure 24 - Incremental Preservation Investment by County

Investment in System Preservation		
County	***State Highway***	***Arterial***
Imperial	$ 174,000,000	$ 3,920,000
Los Angeles	$ 2,856,000,000	$ 243,600,000
Orange	$ 860,000,000	$ 114,800,000
Riverside	$ 486,000,000	$ 66,080,000
San Bernardino	$ 1,560,000,000	$ 103,040,000
Ventura	$ 264,000,000	$ 28,560,000
Regional	**$ 6,000,000,000**	**$ 560,000,000**

Operational Strategies – Getting the most of our existing system
In addition to preserving our system, we also have a responsibility to get the most out of the current system. The Region must maximize the productivity of its transportation system. This is especially true for the State Highway System.

Small physical improvements (e.g., auxiliary lanes that extend the merging range) and technology deployments (e.g., advanced ramp metering) offer us affordable solutions to restore some of this lost productivity. These technology deployments are often referred to as Intelligent Transportation Systems or ITS. The combination of investments reduces delays and the duration of congestion as well as improves the predictability of travel time.

In all, the RTP assigns an incremental $1.3 billion through 2030 to operational strategies that improve the productivity of the State Highway System. The total amount represents less than 1 percent of the overall RTP expenditures, but is expected to produce benefits that are almost an order of magnitude higher.

In the future, ITS technologies will automate transit fare collection and parking payments, use vehicle location systems to track trains and buses to give users "real time" arrival and departure information, as well as use onboard systems to detect and avoid collisions.

- **Congestion Management System**

There are five CMAs in the SCAG region and each develops the respective CMP for its county. The degree of urbanization varies from one county to another so does the magnitude of congestion. All CMPs share the same goal of reducing congestion and in applying congestion relief strategies, but with different priorities in selection of

the related strategies. Therefore, each CMP differs in form and local procedure. A list of CMPs in the SCAG region is provided in the table below.

Figure 25 – CMPs in the SCAG Region

County	*Congestion Management Agency (CMA*	*Congestion Management Program (CMP)*
Los Angeles	Los Angeles County Metropolitan Transportation Authority (LACMTA)	2002 CMP for Los Angeles County
Orange	Orange County Transportation Authority (OCTA)	2001 Orange County CMP
Riverside	Riverside County Transportation Commission (RCTC)	2001 Riverside County CMP
San Bernardino	San Bernardino Associated Governments (SANBAG)	2001 CMP for San Bernardino County
Ventura	Ventura County Transportation Commission (VCTC)	2001 Ventura County CMP

Transportation Demand Management

Transportation Demand Management (TDM) is the all-inclusive term given to a variety of measures used to improve the efficiency of the existing transportation system by managing travel demand. Travel behavior may be influenced by mode, reliability, frequency, route, time and costs, support programs/facilities, perceived personal security and safety and education. TDM strategies encourage the use of alternatives to the single occupant vehicle such as carpools, vanpools, bus, rail, bikes and walking. Alternative work-hour programs, such as compressed work-week programs, flextime and work-at-home (telework and home-based businesses) are also TDM strategies, as are parking management tactics, such as preferential parking for carpools and parking pricing. Proposed investments to implement TDM strategies are summarized for each county in Figure 26. The following are some of the key strategies proposed to meet our TDM goals.

- **Increasing Rideshare (Carpool and Vanpool)**

Just a one percent drop in the carpooling rate translates into more than 40,000 additional vehicles on our freeways and surface streets daily, which results in an annual increase of 302 million vehicle-miles of travel. Key recommendations are to maintain and increase the existing carpool market and increase the number of carpools by 8,000 annually.

The focus of the vanpool program can be low-density residential communities, where transit operators cannot or do not offer service, in addition to continuing to encourage large employers to offer vanpool services to their employees as an alternative means to commute. The goal is to increase the current 1,400 vanpools to 5,000 by 2030.

- **Increasing Work-at-Home (Telework and Home-Based Business)**

Increasing the number of workers who work-at-home or who telework or telecommute decreases home-based work trips, vehicle-miles of travel and vehicle emissions. The proposed plan continues to emphasize the importance of encouraging telework and work-at-home by committing significant resources to such strategies.

- **Decreasing Discretionary Trips and Spreading Demand to Non-Peak Periods**

Decreasing discretionary person and vehicle trips, especially during peak commute periods and emphasizing the use of non-motorized modes offers opportunities to reduce demand and to improve the efficiency of the transportation system when the highest level of travel demand normally occurs. The key to decreasing such discretionary trips is to emphasize education and initiate public-private partnership to coordinate non-work trips, such as trips to doctors, shopping or recreation.

Proposed funding for trip reduction investments are summarized by county in the following table.

Figure 26 - Non-Motorized, Rideshare, ITS, & TDM Investments

County	*Non-Motorized**	*Rideshare***	*ITS/Traveler Information*	*TDM (Park and Ride Lots, Telecommute, etc.)*
Imperial	$35,000,000	$0	$0	*
Los Angeles	$432,000,000	$203,000,000	$623,000,000	$175,000,000
Orange	$115,000,000	$27,000,000	$29,000,000	**
Riverside	$50,000,000	$68,400,000	$25,000,000	**
San Bernardino	$58,000,000	$52,000,000	$48,500,000	$29,000,000
Ventura	$65,000,000	$0	$80,000,000	*
Regional Total	**$755,000,000**	**$350,400,000**	**$805,500,000**	**$204,000,000**

* Imperial and Ventura County costs for TDM are included in the Non-Motorized amount.
** Orange and Riverside County costs for TDM are included in the Rideshare amount.

The total investment proposed for Non-motorized, Rideshare, ITS, and TDM is $2.1 billion.

- **Investments in Non-Motorized Transportation**

  Biking and walking primarily constitute non-motorized transportation. Bikeways and pedestrian paths can play a significant role in meeting the transportation needs of our Region. Particularly, non-motorized transportation plays a bigger role in densely populated, mixed land-use areas or corridors. Non-motorized transportation, by its very nature, would be more effective at a local level in communities that are densely populated and have a good mix of land uses, including commercial, residential and institutional. It can mainly serve as a recreational mode at a regional level.

  Funding levels proposed for Non-motorized transportation for each county are identified in Figure 26.

Thinking out of the Box: Land Use-Transportation Connection

The work over the past year guided by the Growth Visioning Subcommittee has led to the following tenets used as input to developing the Growth Vision RTP Alternative:

- *Using in-fill where appropriate to revitalize underutilized development sites,*
- *Focusing growth along transit corridors and nodes to utilize available capacity,*
- *Providing housing opportunities near job centers,*
- *Providing housing opportunities to match changing demographics,*
- *Ensuring adequate access to open space,*
- *Providing job opportunities, when appropriate, in housing-rich communities,*

By borrowing from the best performing features of PILUT 1 and PILUT 2 the Alternative creates balanced communities by adding jobs to currently housing rich areas.

- *Changing land use to correspond to the implementation of a decentralized regional aviation strategy and its consequent short- and long-term job creation, and*
- *Changing land use to correspond to the implementation of Operation Jump Start and its consequent short- and long-term job creation, and*

- *Referencing the local input and feedback received from 90% of the jurisdictions in the SCAG region.*

Guided by these tenets and based on the analyses of the initial five scenarios and input from the Compass (Growth Visioning) program, the Growth Vision RTP Alternative was developed. This Alternative is intended to represent a targeted distribution of population, households and employment to best meet the 2004 RTP goals approved by the Regional Council.

Strategic System Expansion / Capital Investments

- **Highways and Arterials**

If we were to do nothing beyond completing committed (Baseline) projects by the year 2030, our freeway network mixed-flow lane capacity would increase by less than 10 percent and the arterial system would increase by about 7 percent (see Exhibit for regionally significant Baseline projects). On the other hand, the HOV lane network will nearly double in terms of lane miles by 2030, thereby signifying the need to coordinate the Transportation Demand Management (TDM) strategies to ensure maximum utilization of our HOV system.

The Highway and Finance Task Force adopted a set of guiding principles in developing the highway improvement strategies. These principles are:

- Projects that enhance safety and security.
- Projects that fill significant gaps in the freeway and HOV system should be a priority, examples from the 2001 RTP include the SR-710 gap closure, 210 extension, I-10 HOV lane, 605 HOV lane.
- Projects that relieve significant bottlenecks, examples include truck climbing lanes, mixed flow widening and reconfigurations like the I-215 in San Bernardino, mixed flow continuity projects, completion of the HOV lanes on 405 through the Sepulveda Pass.
- Projects that support improved operational performance, examples include, auxillary lanes, interchange improvements such as better ramps.
- Projects that improve system connectivity.
- Projects that improve access to airports, cargo facilities, and intermodal centers.
- Projects that maximize efficient use of existing capacity, such as Traffic Management Centers, ramp metering, signal synchronization and other ITS.

- ❖ Projects to maintain and preserve the current investment in the highway system.
- ❖ Advancing long range study corridors from the 2001 RTP in high demand and/or high growth areas, based upon the findings of the RSTIS process.
- ❖ Projects that support land use through highway connectivity.

The 2004 RTP contains approximately $14 billion in highway and arterial improvement projects in addition to already committed or programmed projects. This figure includes all capital improvements proposed on the highway and arterial network, including mixed-flow lanes, HOV lanes, interchanges, truck climbing lanes, and grade crossings.

Major categories of the proposed improvements for Highway and Arterials in the 2004 RTP include HOV gap closures, HOV connectors, mixed-flow improvements, toll lanes and high occupancy toll lanes as well as strategic arterial improvements. The following provides a brief description of individual categories of improvements proposed in the Plan.

HOV Gap Closure

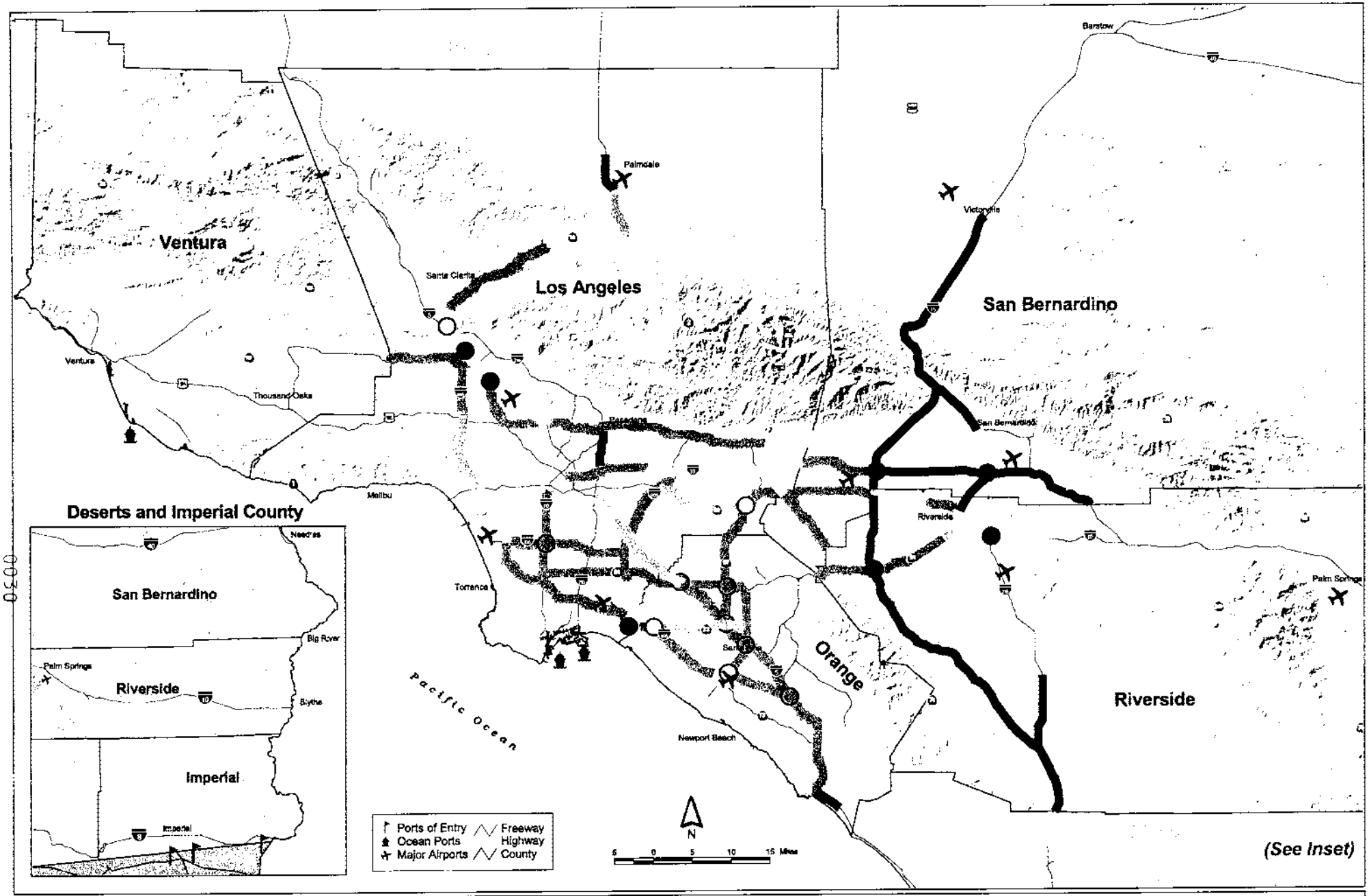
The completion of the HOV system will be an important step towards meeting future travel demand. A number of HOV projects proposed in the 2001 RTP have already been programmed in the current RTIP. The following table provides a summary of HOV gap closure projects proposed in the 2004 RTP beyond the Baseline and Tier 2 that are regionally significant.

Figure 27 - HOV Projects

Project	Implementation Schedule	County	Project Development Requirement/Status
I-710 (I-10 to Huntington Dr)	2010	Los Angeles	PSR Needed
I-710 (Huntington Dr to I-210)	2025	Los Angeles	PSR Needed
SR-14 (Ave P-8 to Ave-L)	2015	Los Angeles	PSR Needed
I-5 (SR-1 to Avenida Pico)	2020	Orange	PSR Needed
I-15 (San Diego Co to SR-60)	2020	Riverside	PSR Needed
I-215 (SR-60/I-215/SR-91 to San Bernardino Co)	2025	Riverside	PSR Needed
I-215 (I-15 to Newport)	2030	Riverside	PSR Needed
I-10 (I-15 to Yucaipa)	2020	San Bernardino	PSR Needed
I-10 (Yucaipa to Riverside Co)	2025	San Bernardino	PSR Needed
I-15 (Riverside Co to I-215)	2025	San Bernardino	PSR Needed
I-15 (I-215 to D St)	2020	San Bernardino	PSR Needed
I-215 (Riverside Co to I-10)	2010	San Bernardino	PSR Needed
I-215 (SR-30 to I-15)	2025	San Bernardino	PSR Needed

Note: Typically, Project Study Reports (PSR) must be completed for these projects in order to compete in the Call for Projects for the RTIP.

The total proposed investment for HOV lane projects is $1.6 billion.



Lane Connector

Base Year (Existing)

Baseline

Tier 2

Plan

2030 High Occupancy Vehicle (HOV) Lane System

Figure

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

2004 DRAFT RTP

HOV Connectors

HOV connectors are an important element of the regional HOV system. The connectors are constructed with drop ramps to the HOV lane along the freeway median to minimize weaving conflicts and maintain speeds.

A number of HOV connectors are identified in the 2030 Baseline. The 2001 RTP identified several HOV freeway-to-freeway connector projects. The following table provides a summary of HOV connector projects identified in the 2004 RTP as part of the constrained projects beyond the Baseline.

Figure 28 - HOV Connector Projects

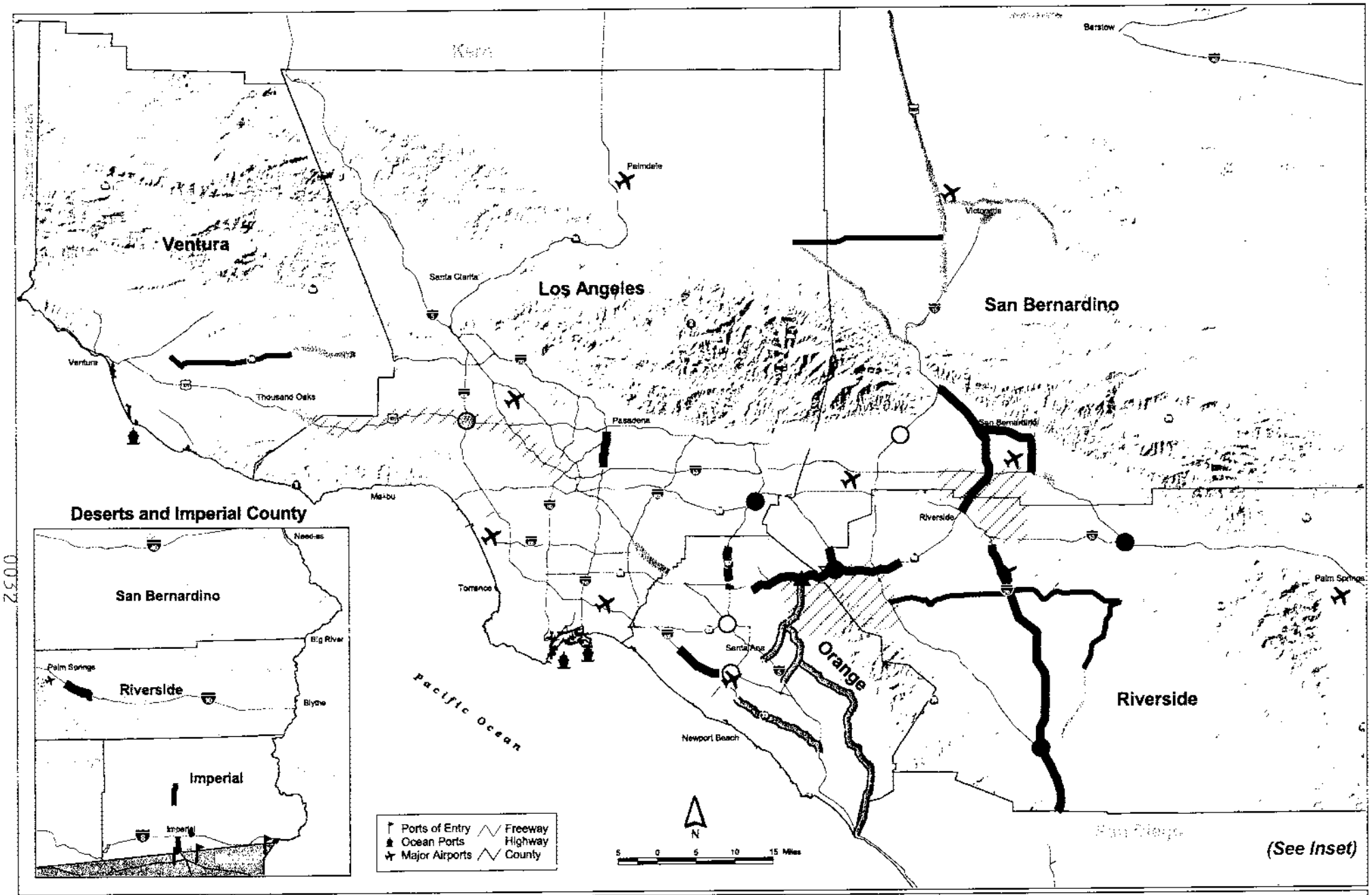
Project	Implementation Schedule	County	Project Development Requirement/Status
I-5 / SR-170	2025	Los Angeles	PSR Needed
I-5 / I-405	2025	Los Angeles	PSR Needed
I-405 / I-605	2020	Orange	In Environmental
SR-60 / I-215 E Jct	2025	Riverside	PSR Needed
I-15 / SR-91	2025	Riverside	PSR Needed
I-10 / I-215	2025	San Bernardino	PSR Needed
I-10 / I-15	2025	San Bernardino	PSR Needed
The total investment proposed for HOV Connector projects is $560 million.			

Mixed Flow

Gaps in the freeway network create traffic bottlenecks during peak use. Several new mixed-flow freeway lanes are proposed to close gaps, increase capacity in certain congested commuter corridors and address county-to-county travel, especially from population-rich to employment-rich areas.

Several routes are under consideration in the Four Corners area, where Los Angeles, Orange, Riverside and San Bernardino counties converge. SCAG, Caltrans and Riverside and Orange counties are exploring methods to approach new corridor development in an environmentally sensitive manner. Most of these projects are proposed for inclusion in the 2004 RTP.

Regionally significant mixed-flow improvements, proposed in the 2004 RTP beyond the Baseline projects, are shown in Figure 29. These projects also reflect strategic improvements needed to accommodate the regional growth vision for 2030.



2030 Mixed Flow, Toll, and Corridor Improvements

Figure

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

2004 DRAFT RTP

0032

Figure 29 - Mixed Flow Projects			
Project	**Implementation Schedule**	**County**	**Project Development Requirement/Status**
SR-98 (SR-111 to Dogwood/SR-98)	2012	Imperial	PSR Needed
SR-111 (s/o SR-98 to Port of Entry)	2012	Imperial	PSR Needed
SR-111 (SR-98 to I-8)	2012	Imperial	PSR Needed
SR-111 (SR-78 to SR-115)	2012	Imperial	PSR Needed
SR-115 (I-8 to Evan Hewes Hwy)	2012	Imperial	PSR Needed
SR-186 (I-8/SR-186 to Port of Entry)	2030	Imperial	PSR Needed
I-710 (I-10 to Huntington Dr)	2010	Los Angeles	PSR Needed
I-710 (Huntington Dr to I-210)	2025	Los Angeles	PSR Needed
I-5 Interchanges (Orange Co to Rosemead Blvd)	2025	Los Angeles	PSR Needed
SR-57 / SR-60 Interchange	2025	Los Angeles	PSR Needed
SR-57 NB (Orangethorpe to Lambert)	2010	Orange	PSR Needed
SR-57 NB (4th through lane at SR-91)	2010	Orange	PSR Needed
SR-91 (SR-55 to Riverside Co)	2010	Orange	PSR Needed
I-405 (SR-73 to Beach)	2030	Orange	PSR Needed
I-10 (Monterey to Dillon)	2025	Riverside	PSR Needed
I-15 (I-215 to San Diego Co)	2030	Riverside	PSR Needed
I-215 (SR-60/SR-91/I-215 to San Bernardino Co)	2025	Riverside	PSR Needed
I-215 (Eucalyptus to I-15)	2025	Riverside	PSR Needed
SR-71 (San Bernardino Co to SR-91)	2030	Riverside	PSR Needed
SR-91 (Pierce St to Orange Co)	2030	Riverside	PSR Needed
I-10 / SR-60 Interchange	2030	Riverside	PSR Needed
SR-71 / SR-91 Interchange	2030	Riverside	PSR Needed
SR-79 (Ramona to Domenigoni)	2015	Riverside	PSR Needed
SR-79 (Hunter to Ramona)	2025	Riverside	PSR Needed
CETAP Hemet to Corona/Lake Elsinore via Cajalco/Ramona	2010	Riverside	PSR Needed
I-215 (Riverside Co to SR-30)	2010	San Bernardino	PSR Needed
I-215 (SR-30 to I-15)	2025	San Bernardino	PSR Needed
SR-210 (I-215 to I-10)	2020	San Bernardino	PSR Needed
SR-18 (Los Angeles Co to US-395)	2020	San Bernardino	PSR Needed
SR-33 Casitas Bypass	2020	Ventura	PSR Needed
SR-118 (SR-232 to Moorpark)	2015	Ventura	PSR Needed
The total proposed investment in Mixed Flow lanes is $3.8 billion.			

Toll Lane Corridors

New toll lane facilities include expanded capacity parallel to SR-91 to address east /west congestion in the Riverside County area. While additional work is in progress

through the CETAP process to identify and study the feasibility of specific alignments, this Plan acknowledges the need for additional capacity in this corridor.

Several additional capacity enhancements are identified in this Plan. While specific mode and project definition will need additional studies in the future, these corridor improvements are primarily anticipated to be implemented with user-fee backed funding mechanisms.

Figure 30 - Toll Corridor Projects

Project	Implementation Schedule	County	Project Development Requirement /Status
US-101 User-Fee-Backed Capacity Enhancement	2030	Los Angeles	PSR Needed
SR-91 (SR-241 to SR-71 including toll connection at SR-71)	2020	Orange	PSR Needed
SR-91 / SR-241 (Add direct toll-to-toll or HOV connection, SR-241 to/from east SR-91)	2015	Orange	PSR Needed
CETAP Moreno Valley to San Bernardino (pending completion of corridor study)	2030	Riverside/San Bernardino	PSR Needed
CETAP Orange Co to Riverside Co (pending completion of corridor study)	2030	Orange/ Riverside	PSR Needed

The total investment proposed for Toll Corridor projects is $912 million in public funding and $3.6 billion in private funding.

Strategic Arterial Improvements/Smart Street Improvements

Arterial roads account for over 65 percent of the total road network and already carry over 50 percent of total traffic. As it becomes more difficult to add lanes to existing freeways or build new freeways, maximizing the potential capacity of arterials becomes an attractive option to increase overall system capacity in already-developed areas. The Strategic Arterial Improvement concept could involve a combination of widening, signal prioritization and other Intelligent Transportation Systems (ITS) deployment and grade separation at critically high-volume intersections to enhance the flow speed and capacity of the arterial.

Arterial Improvements

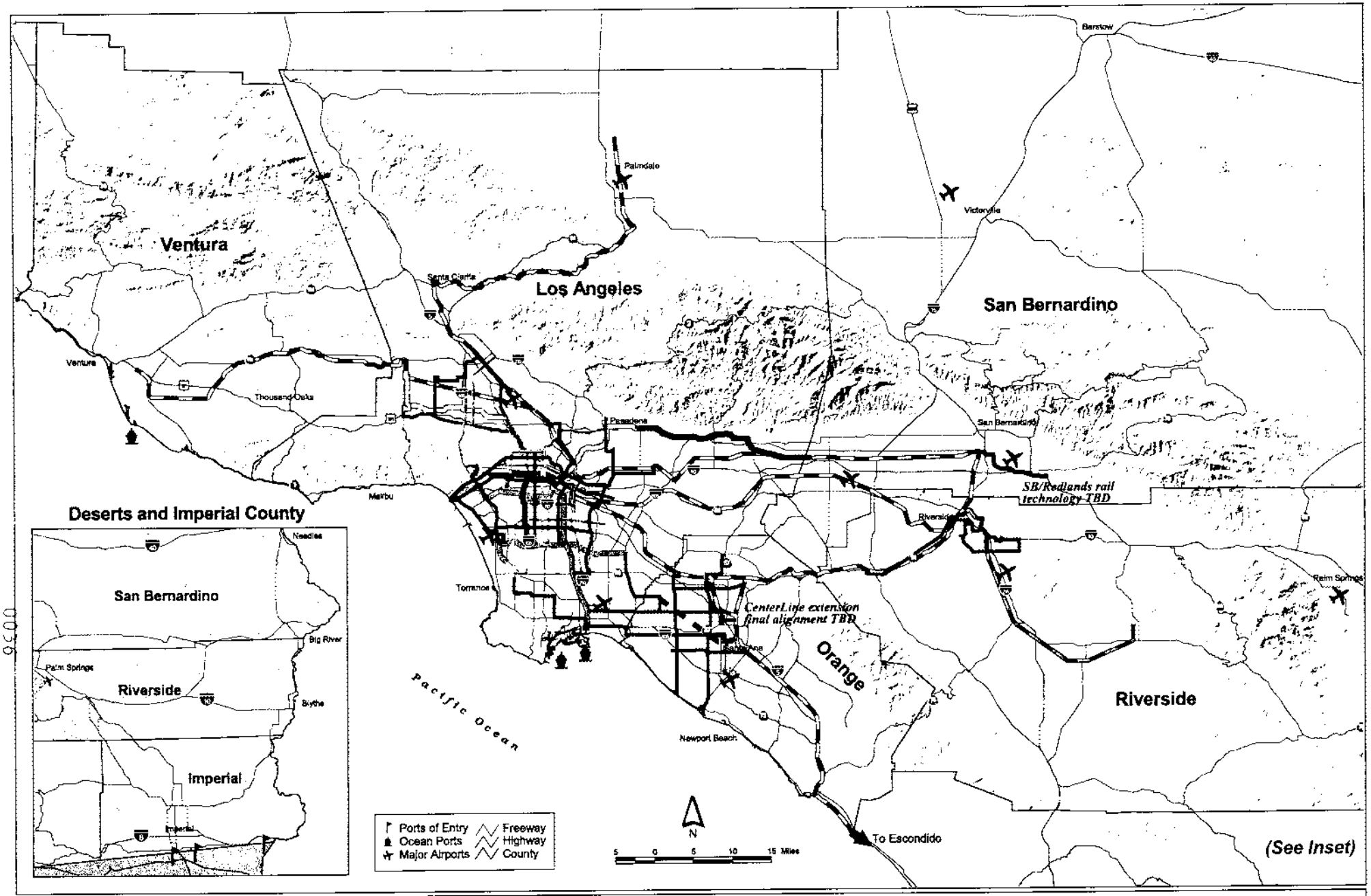
In addition to the specific arterial improvements identified under the Smart Street Improvement Program, this Plan proposes a significant increase in funding for arterial improvements and capacity enhancements. Figure 31 summarizes the recommended 2004 RTP investments in arterials by county.

Figure 31 – Investment in Arterials	
County	**Investment**
Imperial	$289,500,000
Los Angeles	$547,000,000
Orange	$319,100,000
Riverside	$2,900,900,000
San Bernardino	$703,000,000
Ventura	$135,000,000
Regional Total	**$4,894,500,000**

- **Public Transportation System**

  The goals of public transportation services are to ensure mobility for people without access to automobiles and to provide attractive alternatives to the drive alone motorists or discretionary riders. Strategies include a significant increase in service availability, major expansion in the use of bus rapid transit, some re-structuring of services to ensure efficient utilization of available capacity. Figure 32 presents a list of the major transit investments recommended. Plan recommendations along with existing Tier 2 and Baseline service is provided on the Exhibit.

Figure 32 – Transit Corridor Projects			
Project	**Type**	**Implementation Schedule**	**County**
Green Line Extension (Mariposa/Nash to LAX)	Light Rail	2010	Los Angeles
Crenshaw Corridor (Wilshire to Green Line/LAX)	Transitway	2025	Los Angeles
Gold Line Extension (Pasadena to Claremont)	Light Rail	2012	Los Angeles
Metro Center Connector (connecting Gold Line, Blue Line, and Exposition Line in Downtown LA)	Light Rail	2012	Los Angeles
Red Line Extension (Vermont to Fairfax)	Heavy Rail	2012	Los Angeles
CenterLine Extension (final alignment TBD, north to Fullerton or west along PE ROW)	Light Rail	2030	Orange
Harbor Blvd (Fullerton to Newport Beach)	Bus Rapid Transit	2003	Orange
Westminster Blvd (Santa Ana to Long Beach)	Bus Rapid Transit	2004	Orange
Katella Ave (Orange to Blue Line/Long Beach	Bus Rapid Transit	2011	Orange
Edinger Ave (Tustin to Huntington Beach)	Bus Rapid Transit	2012	Orange
Beach Blvd (Buena Park to Huntington Beach)	Bus Rapid Transit	2012	Orange
La Palma Ave (Buena Park to Anaheim)	Bus Rapid Transit	2025	Orange
Fullerton to Brea	Bus Rapid Transit	2025	Orange
Corona Metrolink Station to Downtown Riverside	Bus Rapid Transit	2006	Riverside
Downtown Riverside to Moreno Valley	Bus Rapid Transit	2006	Riverside
Coachella Valley	Bus Rapid Transit	2015	Riverside
San Bernardino/Redlands Extension (4th/Vernon to Grove/Central)	Rail Technology TBD	2014	San Bernardino
Gold Line Extension (Claremont to Montclair)	Light Rail	2014	San Bernardino
The total proposed investment in Mixed Flow lanes is $3.8 billion.			



	Light Rail	Heavy Rail	Transit-way	Bus Rapid Transit	Commuter Rail
Base Year (Existing)	✓	✓		✓	✓
Baseline	✓		✓	✓	✓
Tier 2	✓		✓	✓	✓
Plan	✓	✓	✓	✓	✓

2030 Transit Corridor System

Figure

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Bus Rapid Transit
Bus rapid transit (BRT) is designed to provide fast, high quality bus service, operating in mixed traffic, utilizing low-floor buses, taking advantage of signal priority at intersections, boarding and alighting passengers through streamlined processes, and improving bus stop spacing at planned stations. BRT combines the flexibility of bus systems with some of the features of rail transit. It uses specially identified buses stopping only at major intersections and destinations.

Metrolink Commuter Rail
Metrolink is the regional commuter rail service that operates in six Southern California counties. Southern California Regional Rail Authority (SCRRA) provides and maintains Metrolink services and facilities. The Metrolink system consists of 47 stations. It carries over 31,000 passenger trips and operates 128 train trips per day.

SCRRA has developed a $1.1 billion long-range capital improvement plan that when implemented fully will effectively double the Metrolink System's passenger carrying capacity. The long-range capital plan includes selective double tracking on critical route segments, switching and signal improvements, communication system improvements, new stations and enhancements to existing stations.

Land Use – Transit Coordination
The regional transit program calls for increased and better coordination between transit and land-use planning. The region must develop and adopt a long-term strategy for integrating the planning of commercial, residential and recreational land uses with the transportation system as well as increasing land-use intensities in areas with higher transit services and access. This integration would complement and maximize the use of the region's transit system resulting in increased ridership, reduced congestion, and improved air quality.

Transit-Oriented Development
The regional transit program calls for the local and regional transit and planning agencies to promote transit-oriented developments cooperatively along the major transit corridors. Transit-oriented development (TOD) is a land-use planning tool that promotes pedestrian-friendly environments and supports transit usage. It improves transit accessibility, compact land patterns, walkable environments, and reduced auto use. It results in a greater dependence on transit and significantly increases ridership in these areas.

Transit Centers
A network of transit-based centers and corridors, supported by in-fill development, maximizes the use of existing infrastructure, supports transit ridership, reduces automobile air pollution and preserves green space and undeveloped areas.

To encourage the use of transit and ridesharing further, new transit centers and park-n-ride facilities will be constructed in areas that provide access to the freeway HOV

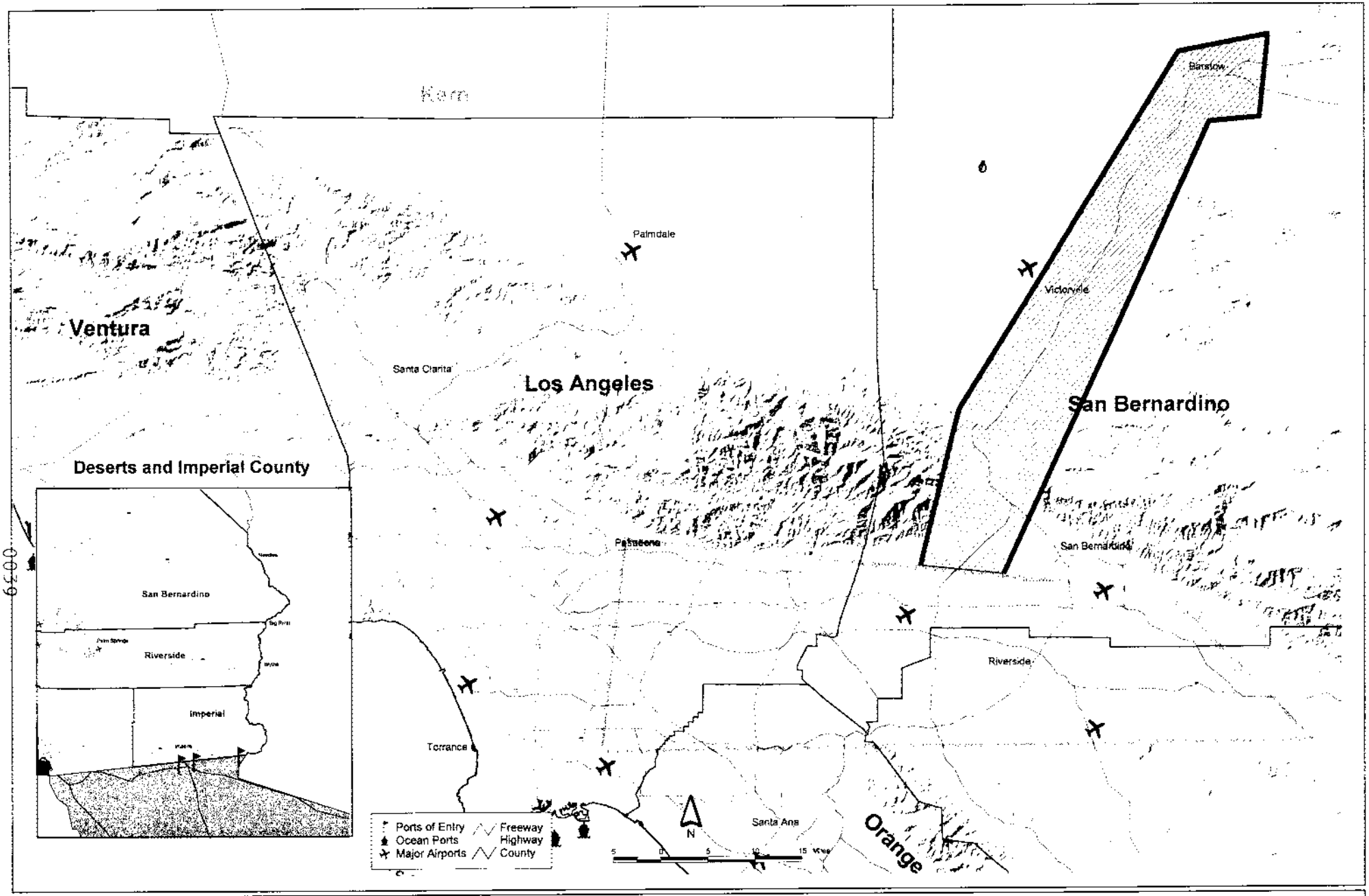
network, transit corridors and express buses. Existing transit centers can be upgraded for multi-modal uses that support restructured transit services.

■ Goods Movement

The focus of this section is to describe goods movement projects and strategies beyond baseline and Tier 2, that are intended to address the challenges posed by current trends in increased demand.

Highway Improvements
In the domain of Goods Movement, the regional transportation system will be challenged to accommodate somewhere between a 70% to 216% increase in truck trips according to various estimates of total truck VMT by 2030. Regional strategies to address these capacity needs are discussed below.

Regional Truckways System
One strategy focuses on the concept of a regional truckways system. This system would comprise upwards of 140 centerline miles of dedicated truck lanes along alignments extending from the San Pedro Bay ports, through the East-West Corridor and out to strategic distribution points northeast or southwest of the urbanized areas as depicted in Figure 33 and the Exhibit. Given the budgetary limits of the regional checkbook, the development of this strategy is proceeding with the assumption that all capital construction and yearly operating costs associated with this system must be supported through the collection of user fees. Conceptual planning efforts have demonstrated that, given the volume of truck traffic along these alignments and an estimated capital development cost of approximately $16.5 billion, a per-mile toll ranging from between $0.38 to $0.80, and averaging $0.56 over a thirty-year financing period, would be sufficient to support financing for the development and operation of this system. Applicable to existing and future volumes of truck traffic within this nationally significant trade corridor, it is envisioned that this toll would be imposed and administered by a regionally controlled Corridor Authority. This would be instituted as a joint-powers authority in a fashion analogous to that of the Transportation Corridor Authorities established in Orange County, and would similarly adhere to existing Caltrans and labor relations contracting protocols.



I-710 Study of Possible Truck Lanes

Eastern Gateway Freeway Corridor Study of Possible Truck Lanes

I-15 Study of Possible Truck Lanes

2030 Truck Improvemens

Figure

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Figure 33 - Truck Lane Projects			
Project	**Implementation Schedule**	**County**	**Project Development Requirement/Status**
I-710 (Ports of Los Angeles/Long Beach to SR-60	2020	Los Angeles	Further Study Needed
SR-60 (Los Angeles County to Riverside County)	2015	San Bernardino	Further Study Needed
SR-60 (San Bernardino County to I-15)	2015	Riverside	Further Study Needed
I-15 (SR-60 to San Bernardino County)	2025	Riverside	Further Study Needed
I-15 (Riverside County Line to Barstow)	2030	San Bernardino	Further Study Needed
The total investment proposed for Truck Lane projects is $16.5 billion in private funding.			

Truck Climbing Lanes

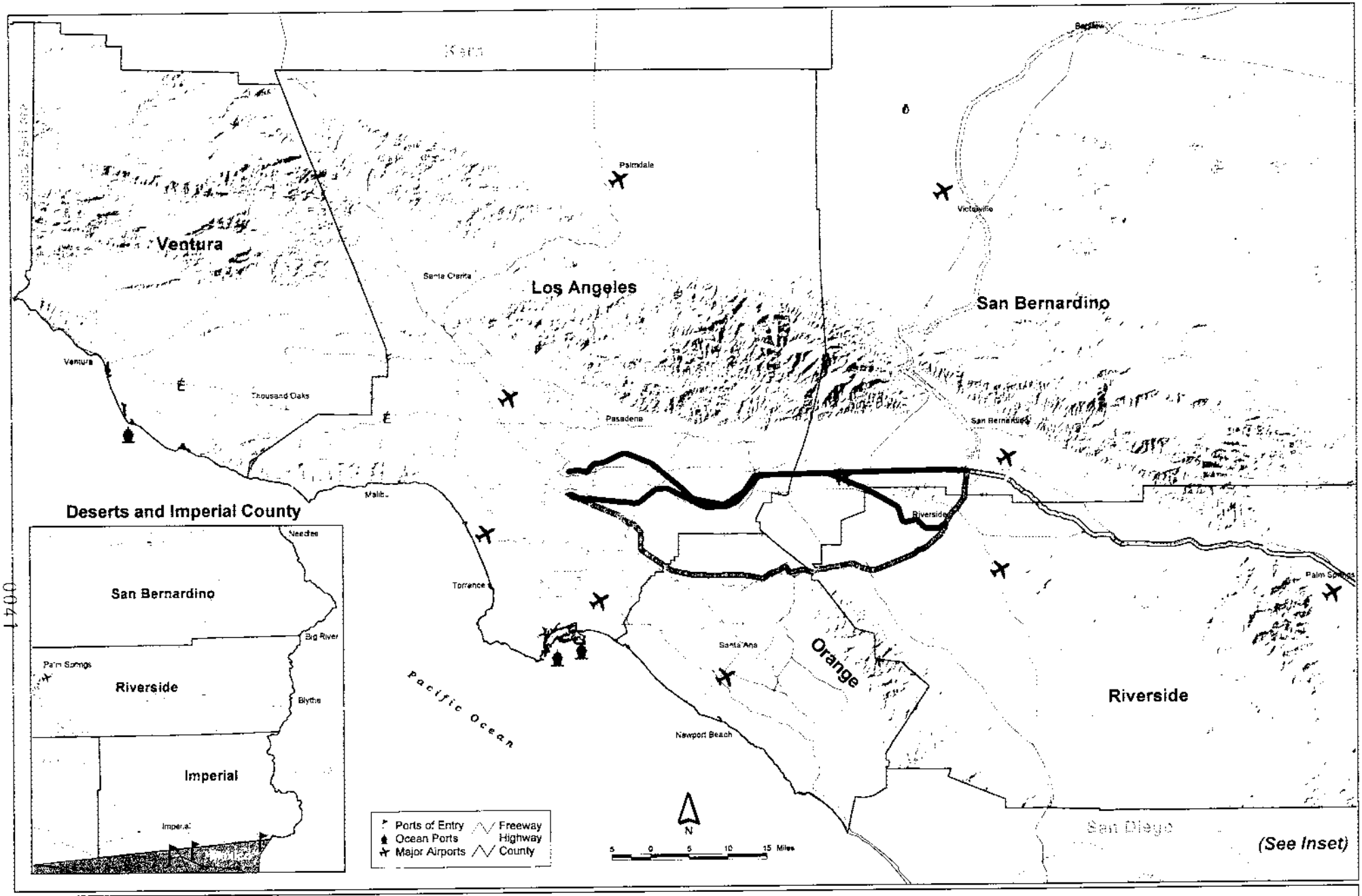
The Plan also proposed adding a number of truck climbing lane improvements in our highway system. The proposed truck climbing lanes above and beyond the currently committed projects identified in baseline and Tier 2 are listed in the figure below.

Figure 34 -- Truck Climbing Lane Projects			
Project	**Implementation Schedule**	**County**	**Project Development Requirement/Status**
SR-57 (Lambert to Tonner)	2010	Orange	PSR Needed
I-10 (San Bernardino Co to Banning City Limits)	2015	Riverside	PSR Needed
SR-60 (Badlands e/o Moreno Valley to w/o I-10/SR-60 Jct)	2030	Riverside	PSR Needed
I-15 (Devore to Summit)	2010	San Bernardino	PSR Needed
The total investment proposed for Truck Climbing Lanes is $179 million.			

Regional Rail Capacity Improvement Program

This section details a strategy that would provide an institutional and financial structure permitting public participation in the development of regional rail capacity. At its core, this strategy is designed to take advantage of the interest rate differential between private sector financial instruments and public sector tax-credit bonds to leverage the revenue streams potential of eligible infrastructure investment opportunities. As envisioned, this strategy would enable the level of investment necessary in the region's East-West Corridor shown in the Exhibit for rail capacity improvements, $1.2 billion, as well as providing a mechanism for the funding of local rail mitigation measures totaling $2.2 billion.

The regional rail capacity improvement program recommended by SCAG would be financed with a revenue stream raised on corridor traffic hauled by UPRR and



BNSF Mainline

BNSF Mainline Study In Progress

Union Pacific Mainline

Union Pacific Mainline Study In Progress

2030 Freight Rail System

Figure

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BNSF. It is also recommended that discussions take place with other west coast ports regarding a similar revenue approach to minimize any potential for cargo diversion.

In order collect and distribute funds throughout the corridor for eligible capital improvement projects, it is recommended that SCAG create a subsidiary agency. The role of this agency, herein identified as the Southern California Railroad Infrastructure Financing Authority (SCRIFA), would be limited to issuing and servicing debt, administering the revenue stream collection process, and distributing money for approved projects to the railroads and to implementing agencies. Similar agencies should be created for administering funds for rail projects in other regions along the west coast.

SCRIFA would work with project sponsors to seek grant funding for capital and operating purposes, and would also seek federal loans and issue revenue bonds.

Eligible capacity improvement projects in the corridor would include:

- Freight railroad infrastructure (tracks, signals, yards, rail-to-rail grade separations, and other freight rail facilities)
- Commuter rail facilities
- Grade separations of highway-rail crossings.

The UPRR and the BNSF would jointly agree on the priority of alternative freight railroad infrastructure projects. The railroads and the SCRRA (Metrolink) would determine priorities for improving commuter rail operations. SCRIFA, in consultation with all stakeholders, would determine priorities for grade separation investments.

The proposed capacity improvements would include a total investment of $3.4 billion in Southern California: $1.2 billion for railroad infrastructure projects and approximately $2.2 billion in grade separation projects.

These capacity improvement projects would be financed by a revenue stream garnered from containers transiting the corridor. SCRIFA would accept a specific revenue stream designed to cover projected debt service and administrative costs.

Complementing the Regional Rail Improvement Program is the Grade Crossing Improvement Program in each county as presented in the Figure 34 and Exhibit below.

Figure 34 – Grade Crossing Corridor Projects			
Project	**Implementation Schedule**	**County**	**Project Development Requirement/Status**
Imperial	2030	Imperial	Individual crossings studied
Los Angeles (including Gateway Cities, North Los Angeles County)	2030	Los Angeles	Feasibility study completed/ Individual crossings studied
Orangethorpe and Orange-Olive Corridors	2020	Orange	Feasibility study completed; further study underway as the ONTRAC or Orange County Gateway Corridor
Riverside	2030	Riverside	Feasibility study completed
San Bernardino	2030	San Bernardino	Feasibility study completed
The total investment proposed for Grade Crossing improvements is $2.0 billion.			

Marine Ports

The ports of Los Angeles, Long Beach and Hueneme are planning to invest $6 billion over the next 25 years on an ambitious infrastructure development program. This program will include widening arterial streets, upgrading freeway ramps, separating railroad grad crossings, expanding rail yards, and adding intelligent transportation system (ITS) to improve ground access management.

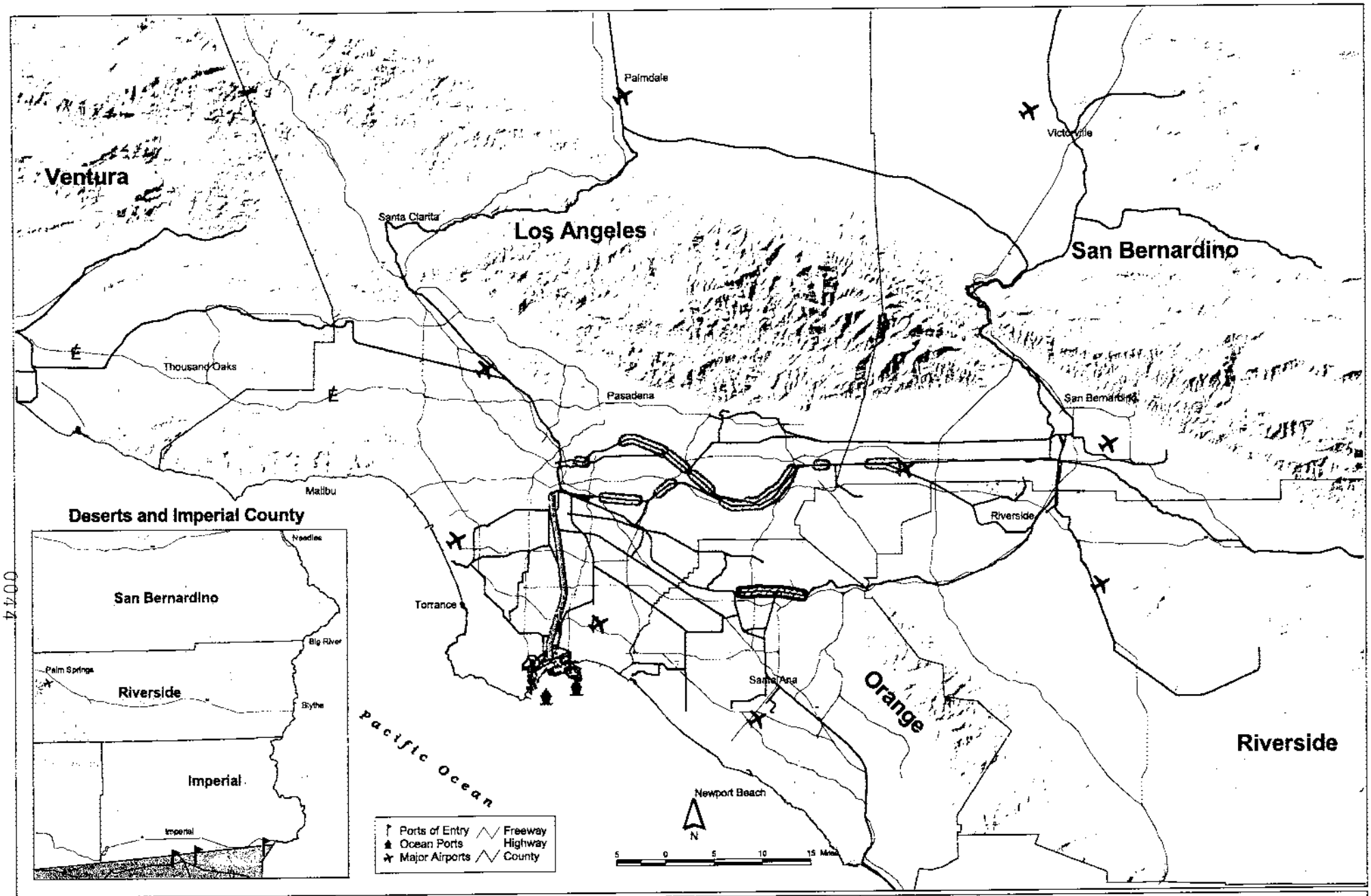
Inland Port

An inland port would serve as a cargo facilitation center, where a number of import, export, manufacture, packing, warehousing, forwarding, customs, and other activities (possible Foreign Trade Zone and/or Enterprise Zone inclusion) could take place and be located in close proximity or at the same site.

This facility could function as an inland sorting and depository center for ocean containers, which would be transported to the inland port via truck or rail. Once at the Inland Port, imported containers could be assembled and sorted into line-haul trains destined for locations outside of the region. Conversely, containers arriving on westbound trains could be broken up at the inland facility, where those containers could be sorted and assembled onto trains destined for individual marine terminals at the ports. Furthermore, containers would be made available for drayage to a local importer. Further study will be required in order to fully detail the functions and parameters of an Inland Port facility.

- **Maglev System**

The Intra-Regional High Speed Rail System, using magnetic levitation (Maglev) technology, would ultimately facilitate the development of a regional airport system, and connect to major activity and multi-modal transportation centers in Los Angeles,



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Grade Separations

Alameda Corridor

Rail Line

Alameda Corridor East

OnTrac

San Bernardino County

2030 Grade Separations

Figure

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Working Draft 09-24-03

Riverside, San Bernardino, and Orange Counties. Without a regional airport at El Toro, the region needs to further decentralize its future growth in air passenger traffic and air cargo to its regional airports in the northern, eastern and southern portions of the region. Therefore, the Maglev system becomes more important and critical to the success of SCAG's decentralized regional aviation system.

For the past four years, SCAG has been studying the feasibility of deploying four Maglev corridors in the region as shown in the Exhibit: Los Angeles Airport (LAX) to March Inland Port in Riverside, LAX to Palmdale, Los Angeles Union Passenger Terminal (LAUPT) to Orange County (Anaheim), and LAX to Orange County (Irvine Transportation Center).

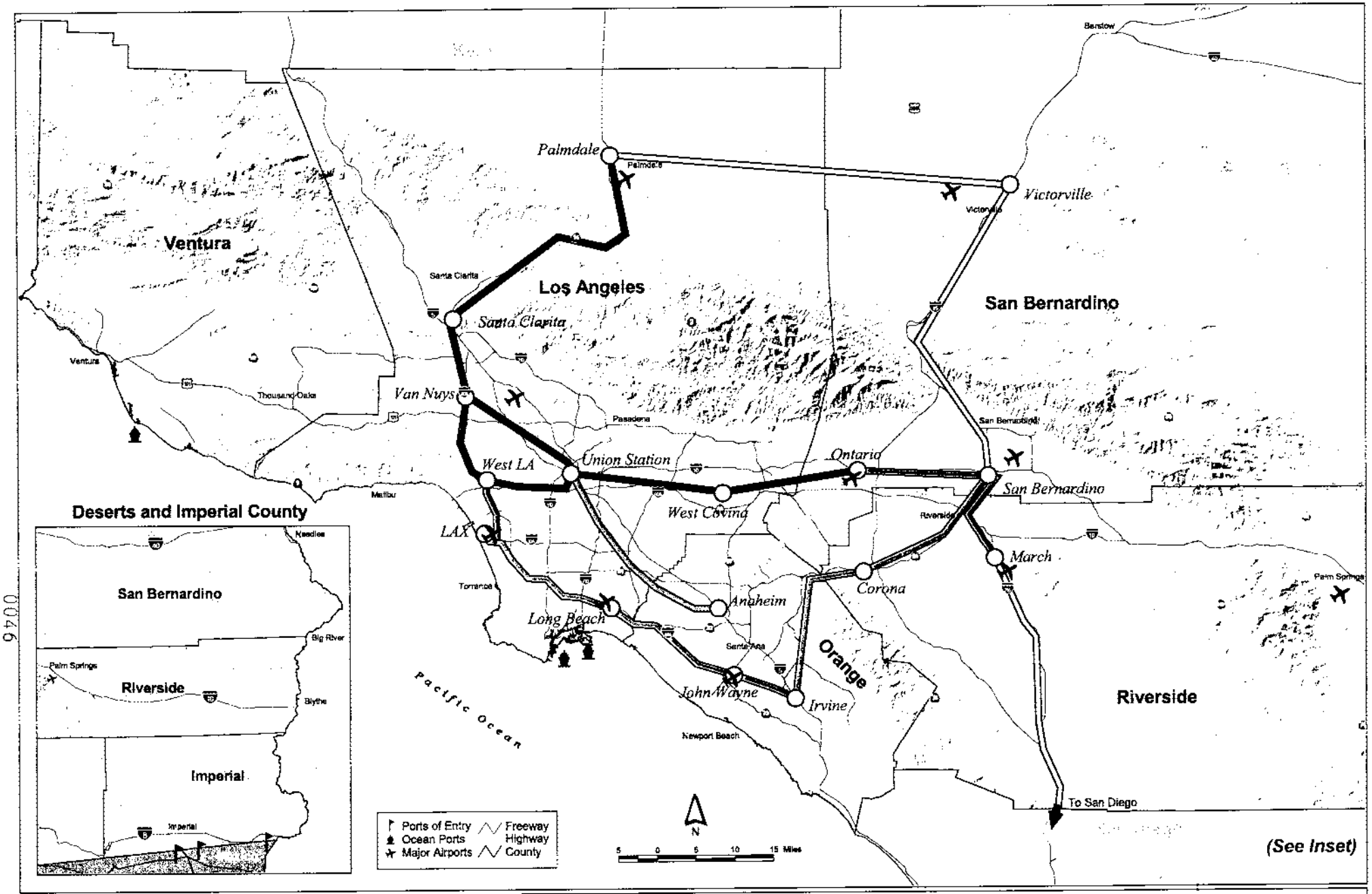
The following figure summarizes the funding needs and completion target for various components of the Maglev program.

Figure 35 – Maglev Program Milestones

Regional Maglev System milestones:	Capital Costs ($Million)	Period
West Los Angeles to LAX	$1,253	2015-2018
Ontario to March Inland Port	$1,253	2015-2018
LAUPT to Central Orange County	$3,500	2015-2018
LAX to Palmdale Airport	$8,200	2016-2020
LAX to John Wayne Airport and to Irvine Ground Transit Center	$7,400	2021-2025
Orange County to San Bernardino	$7,500	2025-2029
San Bernardino/Victorville	n. a.	2030+
Victorville/Palmdale	n. a.	2030+
March Inland Port/San Diego	n. a.	2030+

- **Aviation**

SCAG has updated its regional growth forecast and has developed a new aviation demand forecast and plan that maximizes airport efficiency on a regional scale. The Aviation Task Force developed and adopted a new aviation plan. The new aviation plan is termed the "Preferred Aviation Plan." Under the plan, there is a forecast regional demand of 170 million passengers in 2030, which results in an economic benefit of $18 Billion and 131,000 jobs over a constrained system.



MagLev System

Figure

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Figure 36 – Aviation Demand Comparison
Million Air Passengers - MAP

Existing Conditions and the Preferred Aviation Plan											
	BUR	**JWA**	**LAX**	**LGB**	**MAR**	**ONT**	**PSP**	**PMD**	**SBD**	**SCI**	**TOTAL**
Existing Conditions (2002)	4.6	7.9	56.2	1.4	0	6.5	1.1	0	0	0	77.8
Preferred Aviation Plan (2030)	**10.8**	**10.8**	**78.0**	**3.8**	**8.0**	**30.0**	**3.2**	**12.8**	**8.7**	**4.0**	**170.1**

Under the Preferred Aviation Plan, rather than relying on expanding existing urban airports, the future demand for air travel will be largely served by using available capacity at airfields located in the Inland Empire and north Los Angeles County where projected population growth will be best served. Cooperation between airport authorities is necessary to ensure efficient usage of capacity. Using this available capacity promotes a decentralized system that relieves pressure on constrained, urbanized airports and on the region's surface transportation infrastructure.

The 170 total MAP served by the Preferred Aviation Plan in 2030 is slightly higher than the 167.3 MAP that was forecast to be served by the 2001 adopted aviation plan by 2025. Given a lower aviation demand forecast resulting from the events of September 11, 2001, and the recent economic downturn, it can be concluded that the new assumptions and concepts incorporated into the Preferred Aviation Plan as identified in Figure 37 alleviates the substantial loss of capacity associated with eliminating El Toro from the regional system.

Under SCAG's Preferred Aviation Plan, air cargo becomes more decentralized. LAX, while serving greater amounts of air cargo, drops from handling 75% of regional air cargo to 27%. Ontario airports air cargo-handling jumps from 21% to nearly 26%. Other airports in Palmdale and the Inland Empire go from serving no air cargo to serving a combined 44%.

Figure 37 - Air Cargo Demand—2030 Preferred Aviation Plan
(Thousands of Tons of Air Cargo)

	2002		2030	
	Tons x 000	Percent of total	Tons x 000	Percent of total
BUR	43	1.6%	**87**	**1.0%**
JWA	15	0.6%	**43**	**0.5%**
LAX	1,958	74.7%	**2,340**	**26.8%**
LGB	58	2.2%	**137**	**1.6%**
MAR	0	0.00%	**1,117**	**12.8%**
ONT	547	20.9%	**2,252**	**25.8%**
PSP	0.8	0.03%	**128**	**1.5%**
PMD	0	0.0%	**1,024**	**11.7%**
SBD	0	0.0%	**1,092**	**12.5%**
SCI	0	0.0%	**504**	**5.8%**
TOTAL	2,623	100%	**8,724**	**100 %**

Recommended Implementation Strategy
Cooperation between airports would be accomplished through the integration of airport master plans, and the development of memoranda of understanding and contractual agreements between airports. These agreements would also identify complementary roles and market niches between airports, to increase synergy in the system and maximize utilization of available airport capacities in the region. For example, Los Angeles World Airports (LAWA) would play a key role in integrating master plans for the three airports it operates, LAX, Ontario and Palmdale.

The preferred plan requires that an airport "Consortium" be developed through memoranda of understanding between all of the airports in the regional system. The agreements would establish a common framework for coordinating all airport master planning and facility construction consistent with an adopted Regional Aviation Plan. The Consortium would focus on on-airport operations and facilities, and not have power of eminent domain.

Without Maglev, the Preferred Aviation Plan would only serve a total of 155.0 MAP, or a loss of 15 MAP to the system. The ability of airports to "broker" airlines to provide long haul and international service to suburban airports will be dependent on the ability to quickly transport long haul and international travelers at these airports to their destinations around the region. The plan requires that the airport Consortium work closely with the MAGLEV Joint Powers Authority to ensure systems integration.

Ground Access
The Preferred Aviation Plan would have localized ground access impacts at a number of airports. It would result in a dramatic increase in passenger and cargo activities at Ontario, Palmdale and a number of other airports. A number of freeway

and arterial improvements and transit strategies are proposed in the Plan to address the ground access issues as part of the overall transportation investment in the Region. Specific ground access improvements proposed in the Plan are identified in the Technical Appendix of the RTP.

Transportation Finance: Meeting Our Needs

SCAG forecasts funding shortfalls over the 2004 RTP period. The region would not be able to provide capacity enhancements beyond the short-term commitments without developing a strategy to generate additional transportation revenues.

- **Guiding Principles for the Development of Funding Strategies**

To facilitate the development of the 2004 RTP funding strategies, the Highway and Transportation Finance Task Force along with the Transportation and Communication Committee adopted a set of guiding principles. The guiding principles are as follows:

- ❖ Maximize available resources
- ❖ Ensure revenue is adequate to maintain conformity
- ❖ Enhance regional and local choice in the selection of projects for funding
- ❖ Identify revenue sources that are reasonable and consistent with current funding practices and long-term trends in transportation finance

- **Recommended Funding Strategies to Implement SCAG's RTP**

Within the framework of the aforementioned guiding principles, the Highway and Transportation Finance Task Force, along with various other SCAG committees, engaged in extensive debates concerning the adequacy and feasibility of various revenue options available to respond to the SCAG region's funding shortfall. On the basis of the Task Force's actions and policy direction, the following funding strategies for the 2004 RTP were developed:

- **Public Funding Strategy**

- ❖ Protect / Strengthen Existing Transportation Revenues, specifically Proposition 42

- ❖ Allow 55% Voter Approval for Local Transportation Sales Taxes / Continue Local Transportation Sales Taxes Where Necessary

- ❖ Maximize Motor Vehicle Fuel User Fee Revenue Through Pay-As-You-Go and Debt Financing (Assuming an Adjustment to the Motor Vehicle Fuel Excise Tax Rate to Maintain Historical Purchasing Power)

- ❖ Review Methods for Collecting Revenues from Alternative Fuel Vehicles

- **Development Mitigation Fee**

  Currently, the San Bernardino Associated Governments (SANBAG) is considering the feasibility of a development mitigation fee associated with the county's Measure I renewal program (sales tax extension program). Initial revenue estimates for some approaches identified for further analyses indicate that about $1.5 billion could be generated for arterials and interchanges in San Bernardino County.

- **Private / Innovative Funding Strategy**

  - ❖ Consider the Feasibility of HOT Lanes for New Facilities
  - ❖ Pursue User-Fee Supported Project Financing for Major Regional Investments Where Applicable

  More specifically, potential financing structures identified for the three proposed projects include:

  Truckways Financing

  - ❖ Development cost for a regional system (142 miles including the I-710 from the Ports to the SR-60 east to the I-15 north to Barstow) is estimated to be $16.5 billion.
  - ❖ Net revenues generated from tolls would be leveraged to issue tax-exempt revenue bonds.
  - ❖ Capital financing instruments may include a combination of senior-lien tax-exempt revenue bonds and federal credit enhancement in the form of loans (at 33% total eligible capital cost-TIFIA).
  - ❖ The tolls are assumed to be imposed at an average rate of $0.56 per mile.

  Regional Rail Capacity Project Financing

  - ❖ Development cost for this component is estimated to be $3.4 billion ($2.2 billion for capacity improvements and $2.2 billion for grade separations).
  - ❖ The financial analysis relies upon taking advantage of the interest rate differential between private sector financing costs and tax-credit bonds, a public financing mechanism that would substitute federal tax credits for interest payments.
  - ❖ Under a tax credit bond-financing structure, the federal government effectively subsidizes the interest portion of the debt through federal income tax credits.
  - ❖ It is assumed that a revenue stream equivalent to about $5.39 per TEU would be generated to finance the program.

Maglev Project Financing

- The cost for this initial operating segment (IOS) is estimated to be $6.2 billion.
- The financing structure for this project relies upon the issuance of tax-exempt revenue bonds and TIFIA loans.
- An average charge of $0.30 per passenger mile would be needed to finance the project.

■ Funding Components & SCAG's Regional Checkbook

The figure below itemizes the funds generated from each component of the funding strategy.

Figure 38 - 2004 RTP Public & Private Funding Strategies
(In Billions $2002)

Public Funding Strategy	**$**
Continue / Impose Local Transportation Sales Taxes (San Bernardino, Imperial, and Los Angeles Counties)	8.0
Maximize Motor Vehicle Fuel User Fee Revenue Through Pay-as-you-go and Debt Financing (Assuming a Fuel Tax Increase of 5 Cents in 2010 and 1 cent annually from 2011 to 2015 for a total of 10 cents)	21.7
Development Mitigation Fee (San Bernardino County)	1.5
Total	**31.2**
Private Funding Strategy	
Consider the Feasibility of HOT Lanes for New Facilities	N/A
Pursue User-Fee Supported Project Financing for Major Regional Investments Where Applicable	N/A

Figure 39 is the revised Regional Checkbook for the 2004 RTP with the funding strategies.

Figure 39 - 2004 RTP Regional Checkbook by County
(2002-2030, In Billions $2002)

County	**Baseline Revenues**	**Committed Costs**	**Net Balance**	**Public Funding Strategy**	**Total Public Funding Available for 2004 RTP Investments**
Imperial	$1.1	$0.8	$0.3	$0.3	$0.6
Los Angeles	$76.0	$79.4	($3.4)	$15.4	$12.0
Orange	$20.5	$15.8	$4.7	$3.0	$7.7
Riverside	$12.1	$6.0	$6.1	$2.6	$8.7
San Bernardino	$8.0	$10.9	($2.9)	$8.8	$5.8
Ventura	$2.7	$2.5	$0.2	$1.1	$1.3
Total	**$120.4**	**$115.4**	**$5.0**	**$31.2**	**$36.1**

Note: Numbers may not add due to rounding.

CHAPTER 5: PLAN PERFORMANCE: HOW WILL THE PLAN PERFORM?

System / Investment Performance

This chapter summarizes how well the RTP performs in meeting its adopted goals, and satisfies State and federal requirements.

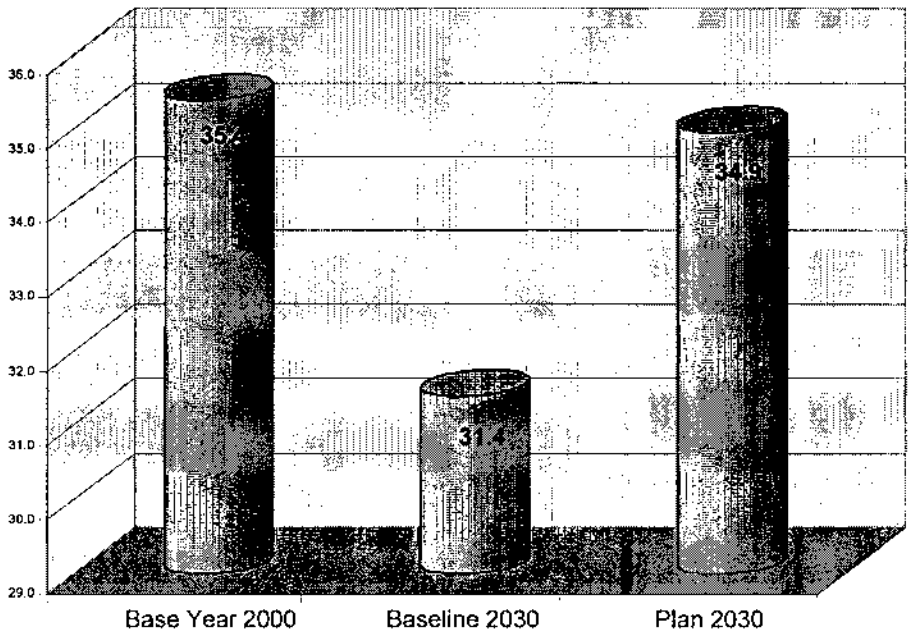
- **Plan Investment Performance**

Mobility
The mobility performance outcome relies on two commonly used measures: speed and delay.

- ❖ Speed is the average speed experienced by travelers regardless of mode in miles per hour (MPH)
- ❖ Delay is the difference between the actual travel time and travel time that would be experienced if a person traveled at the legal speed limit.

Speed Results
Figure 40 compares the speeds of the three scenarios.

Figure 40: SCAG Regional Performance Analysis
Average Daily Speeds Comparisons - MPH



Delay Results

Figure 41 compares delay results and shows that the plan reduces total daily delay by more than 40 percent compared to the "No Project Baseline" and an increase of 37 percent over Year 2000 conditions.

Figure 41: SCAG Regional Performance Analysis
Average Daily Delay per Capita Comparisons
(in millions)

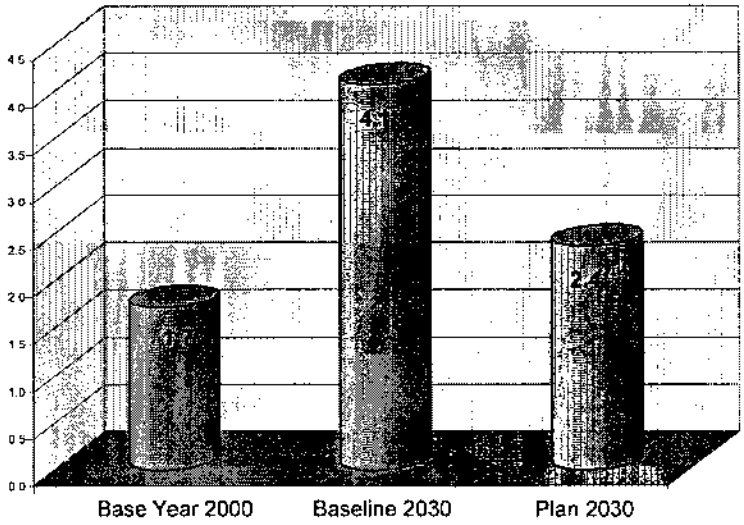
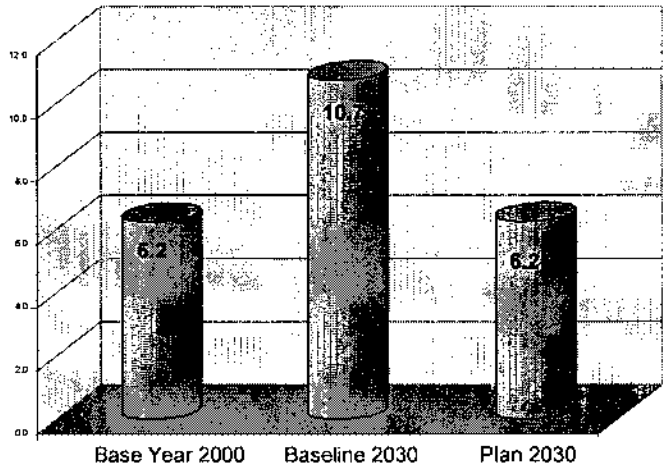


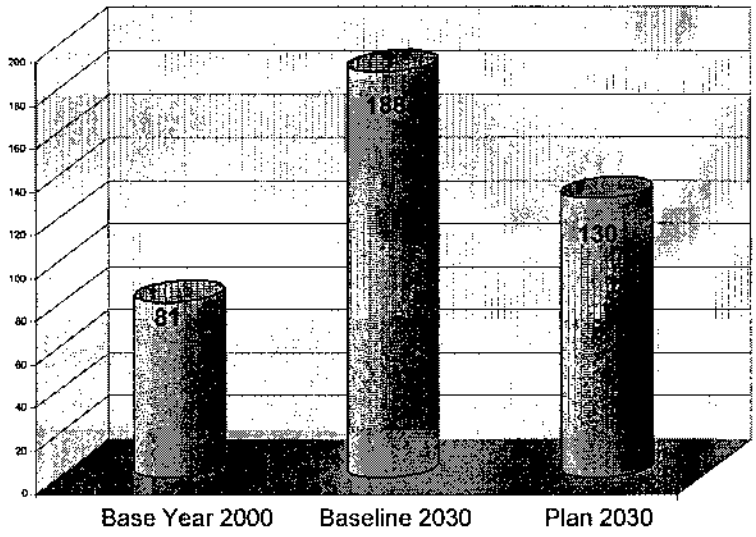
Figure 42 compares average daily delay per capita, which is a measure that takes into account that there will be more people traveling on the Region's transportation system by Year 2030.

Figure 42: SCAG Regional Performance Analysis
Average Daily Delay per Capita Comparisons



Finally, Figure 43 compares average daily Heavy Duty Truck delays, which shows an improvement of over 30 percent compared to the Baseline.

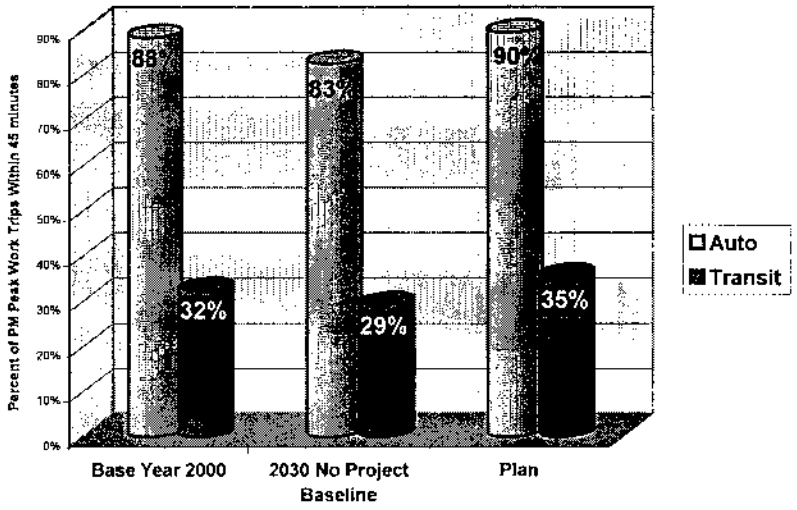
Figure 43: SCAG Regional Performance Analysis
Average Daily Heavy Duty Truck Delays
(hours in thousands)



Accessibility Results

Accessibility is used to capture how well the transportation system performs in terms of providing people access to opportunities. For the 2004 RTP Update, accessibility is defined as the percentage of the population who can travel between work and home within 45 minutes during the PM peak period. The results of the analysis are presented in Figure 44, which clearly shows that the Plan not only improves accessibility compared to the 2030 Baseline, it actually shows an improvement compared to Base Year 2000 conditions for both auto and transit. This is primarily due to the Land Use Integration strategy, which intensifies densities and focuses development close to work and in around major transit corridors.

Figure 44: SCAG Regional Performance Analysis
Auto and Transit Accessibility Estimates



Reliability Results

The reliability outcome reflects the degree to which travelers experience variations in their trip times from day to day. In other words, it captures the relative predictability of the public's travel time. Figure 45 shows the benefits derived from the investments that help respond more quickly and effectively to traffic accidents or provide better traveler information.

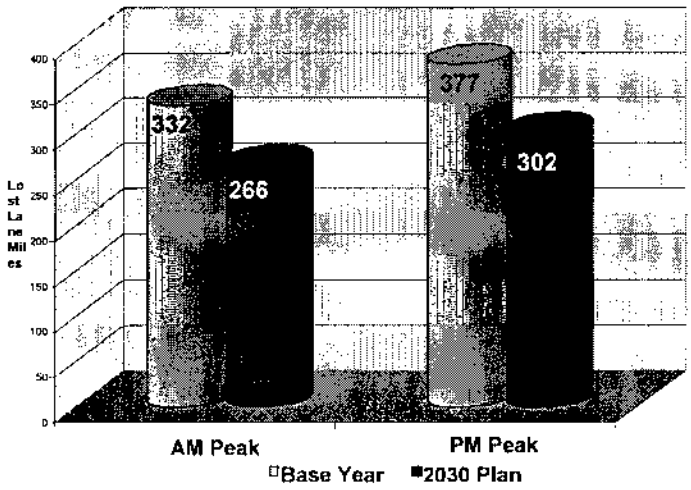
Figure 45: SCAG Regional Performance Analysis
Planned Improvements in Travel Time Reliability

Peak Period	Hour	Base Year Estimated Average Percent Variability	Estimated Plan Average Percent Variability
Morning Peak Period (6 am to 9 am)	6am to 7am	11	10
	7am to 8am	15	13
	8am to 9am	15	13
Afternoon Peak Period (3 pm to 7 pm)	3pm to 4pm	21	19
	4pm to 5pm	20	18
	5pm to 6pm	19	17
	6pm to 7pm	22	20

Productivity Results

The productivity outcome reflects the degree to which the system performs during peak demand conditions.

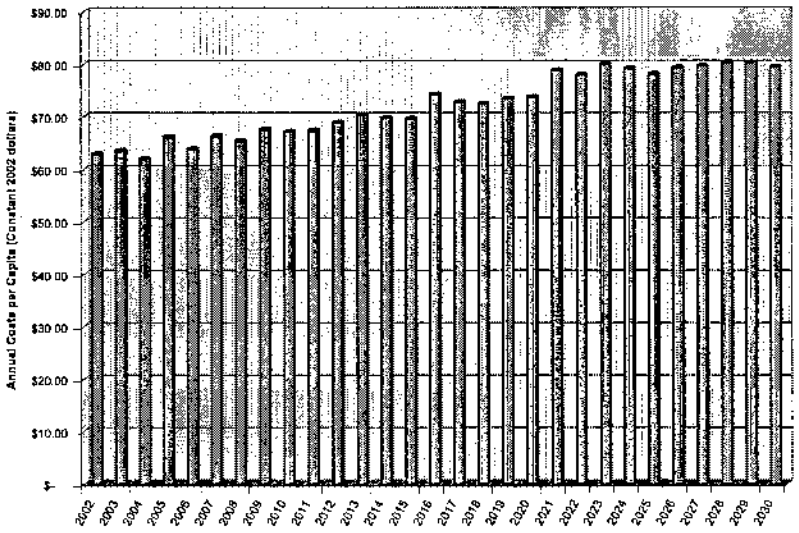
Figure 46: SCAG Regional Performance Analysis
Planned Improvements in Highway System Productivity



Preservation Results

Average annual costs per capita is a useful measure to understand and consider the growing costs of maintaining the Region's aging infrastructure. The indicator reflects the burden or responsibility placed on every person in the Region annually to preserve the transportation system. As can be seen by Figure 47, these costs increase over the duration of the plan.

Figure 47: SCAG Regional Performance Analysis
Annual Costs per Capita for System Preservation



Safety Results

Improving safety by minimizing accidents is a critical outcome of the RTP. The safety is measured in terms of accident rates. Figure 48 summarizes this information for base year, Baseline and Plan.

Figure 48: SCAG Regional Performance Analysis
Safety Analysis Results

Fatalities				
Facility	*Rate Per Mil. Vehicle Miles*	*2000 Base Year (Daily Mil. Veh. Miles)*	*2030 Baseline (Daily Mil. Veh. Miles)*	*2030 Plan (Daily Mil. Veh. Miles)*
Freeway	0.0059	206.1875	269.8765	262.4004
Non-Freeway	0.0206	156.5734	231.0084	208.6375
Transit – Bus	0.0669	0.5866	0.6089	0.6547
Transit – Rail	0.5395	0.0230	0.0327	0.1293
System Total		**363.3704**	**501.5265**	**471.8220**
System Total Fatality Rate		**0.01238**	**0.01280**	**0.01265**

Injuries				
Facility	*Rate Per Mil. Vehicle Miles*	*2000 Base Year (Daily Mil. Veh. Miles)*	*2030 Baseline (Daily Mil. Veh. Miles)*	*2030 Plan (Daily Mil. Veh. Miles)*
Freeway	0.2712	206.1875	269.8765	262.4004
Non-Freeway	0.7237	156.5734	231.0084	208.6375
Transit – Bus	19.0049	0.5866	0.6089	0.6547
Transit – Rail	10.3700	0.0230	0.0327	0.1293
System Total		**363.3704**	**501.5265**	**471.8220**
System Total Injury Rate		**0.49709**	**0.50306**	**0.50009**

Property Damage				
Facility	*Rate Per Mil. Vehicle Miles*	*2000 Base Year (Daily Mil. Veh. Miles)*	*2030 Baseline (Daily Mil. Veh. Miles)*	*2030 Plan (Daily Mil. Veh. Miles)*
Freeway	0.7241	206.1875	269.8765	262.4004
Non-Freeway	0.9505	156.5734	231.0084	208.6375
System Total		**362.7608**	**500.8849**	**471.0379**
System Total Property Damage Rate		**0.8218**	**0.8285**	**0.8244**

Sustainability Results

A transportation system is sustainable if maintains its overall performance over time with the same costs for its users. Sustainability therefore reflects how our decisions today affect future generations. The indicator for sustainability is the total inflation-adjusted cost per capita to maintain overall system performance at current conditions.

The analysis identifies that performance of the transportation system in year 2030 with the Plan would be approximately the same as for Base Year 2000 results.

However, the overall cost of the Plan represents a $20 per capita per year increase to cover preservation and operations investments. Note that despite this incremental cost, the Plan performs extremely well given the expected population and travel growth in the Region.

Cost Effectiveness

Cost effectiveness reflects the degree to which transportation expenditures in the Plan yield benefits that the transportation users experience. It attempts to measure how much "bang for the buck" is received from the Plan. The indicator for cost effectiveness is benefit-cost ratio. Benefit/Cost results are presented in Figure 49.

Figure 49: SCAG Regional Performance Analysis
Benefit Cost Results

Benefits	In Present Value $
Delay Savings	$ 44,770,659,960
Safety Improvements	$ 6,257,459,963
Air Quality Improvements	$ 1,092,040,648
Reductions in Vehicle Operating Costs	$ 11,442,239,659
	$ 63,562,400,230
Project Costs	$ 17,033,460,343
Net Present Value	$ 46,528,939,887
Benefit/Cost Ratio (Value of $1 Invested)	$ 3.73

Environmental Justice

Environmental justice requirements applicable to SCAG's transportation plans stem from Title VI of the Civil Rights Act of 1964, President Clinton's 1994 Executive Order 12898 on Environmental Justice, related DOT and FHWA orders, and federal planning regulations. In accordance with these laws and regulations, SCAG seeks to ensure that the RTP's benefits and burdens are distributed equitably across groups based on race, income, age or disability.

SCAG's environmental justice program includes two main elements: public outreach and analysis. Our public outreach efforts intend to assure that all members of the public have an opportunity to participate meaningfully in the planning process. These efforts include targeted outreach to minority and low-income communities throughout the Region to assure that their concerns are heard and addressed. The analysis of SCAG's RTP examines several performance measures to determine if there is a disproportionate negative impact of the plan on any income, ethnic, or age group. If inequities are found, they should be mitigated, though they can be justified if there is no less-discriminatory alternative or if any alternative would pose an extraordinary financial cost. Preliminary review of environmental justice indicators does not show evidence of disproportionate impact on minority or low-income populations.

Transportation Conformity

Preliminary emission analysis for the proposed Draft 2004 RTP indicates that finding transportation conformity for the South Coast Air Quality Basin (SCAB) appears to be positive. Emission budget for the remaining air districts within the SCAG region are pending.

CHAPTER 6: IMPLEMENTING OUR PLANS AND MONITORING OUR PROGRESS

This section discusses how SCAG, as the Metropolitan Planning Organization (MPO) for the six-county region, monitors the implementation of the 2004 Update of the Regional Transportation Plan (RTP) and monitors its progress in achieving its stated goals and system performance.

Securing the Planned Funding

The plan calls for incremental funding using private and public financing. SCAG must work with the State and the private sector to ensure these funds are secured (see Chapter 4 for details).

Embracing System Management

Coordinating with stakeholders in the region and around the state is critical to embrace system management, protect our investment in infrastructure, and get the most out of the existing multi-modal system. Even before the incremental funds are secured, SCAG plans to coordinate an effort in conjunction with other MPOs and the State to ensure that preservation and operations investments are secured.

Integrating land-use policies

This RTP is a critical step in identifying that land-use changes need to play a significant role in the planning process. Yet to make these changes a reality, the land-use action plan described in previous chapters must be implemented fully. SCAG will work closely with representatives from cities and counties in the Region so that these policies are reflected in their general plans.

How the RTP Gets Implemented

- **Regional Transportation Improvement Program**

The primary vehicle to implement the projects and programs identified in the RTP is through the Regional Transportation Improvement Program (RTIP). The RTIP is a compilation of state, federal, and locally funded transportation projects proposed over a six-year period. The projects include state and local highway improvements, transit, rail and bus facilities, high occupancy vehicle lanes, signal synchronization, intersection improvements, and freeway ramps, among others.

State statues require a biennial RTIP update on an even-year cycle. The biennial RTIP requires a conformity analysis and finding. The standard biennial RTIP cycle

is consistent with the State Transportation Improvement Program (STIP) cycle. The RTIP incorporates the SCAG region's portion of the STIP.

- **Regionally Significant Transportation Investment Study**

  Within the context of regional transportation planning, the first step toward strategy/program development is the Regionally Significant Transportation Investment Study (RSTIS), or a corridor feasibility study of alternatives analysis including a NEPA "purpose and need" statement and preliminary environmental documentation.

  SCAG, in cooperation with other stakeholders, approves the initiation and scope of an RSTIS. Before a project can be included in the RTIP for construction, the project must be one of the alternatives in a completed RSTIS, a completed project initiation document and cleared environmental documents. The RSTIS would be included in SCAG's Overall Work Program.

How We Monitor Our Progress

As the designated MPO for the six-county region, SCAG monitors transportation plans, projects and programs for consistency with regional plans. SCAG also monitors the performance of the transportation system. SCAG has been monitoring a number of performance measures through a benchmarking process in the annual State of the Region report. SCAG also conducts a study of commuter attitudes and behavior and publishes an annual State of the Commute report.

The following sections outline several of the significant tools used by SCAG to monitor regional progress in advancing the 2004 RTP.

- **RTIP Database Management (Trantrak)**

  To manage the RTIP process efficiently, SCAG has developed an RTIP database. The RTIP database serves as a listing for projects in the RTIP, as well as a mechanism for monitoring project implementation in the approved RTIP.

- **Conformity**

  In federally designated non-attainment or maintenance areas, specific monitoring and consistency are required under the Transportation Conformity Rule. During project implementation, sponsor agencies must implement only those projects that are consistent with the conforming RTIP and RTP. The project design concept and scope must be consistent with those reflected in the conforming RTIP.

- **Highway Performance Monitoring System (HPMS)**

  HPMS is used as a transportation monitoring and management tool to determine the allocation of Federal Aid Funds, to assist in setting policies and to forecast future transportation needs as it analyzes the transportation system's length, condition and performance.

- **VMT, Emission and Congestion Report**

  Beginning six years after the date of enactment of the Clean Air Act Amendments of 1990, any state containing serious and worse Ozone non-attainment areas, or moderate and/or serious carbon monoxide non-attainment areas, is required to demonstrate whether current aggregate vehicle miles traveled (VMT), aggregate vehicle emissions, congestion levels and other relevant parameters are consistent with those used for the area's demonstration of attainment. As the Region's MPO, SCAG is responsible for forecasting and tracking VMT, emissions and congestion, and submitting these reports to the California Air Resources Board (CARB).

- **Transit System Performance Assessment**

  Implementation of the RTP requires changes in the operating practices of transit agencies and integration of the three tiers of transit into a single functioning system. The process of integration is the responsibility of the operators. SCAG will be evaluating the performance of selected operators to provide feedback and to transfer applicable lessons to other operators in the Region.

- **The State of the Region**

  The annual State of the Region report published by SCAG tracks a series of indicators on major issues facing the region. In addition to data on commuters, the State of the Region tracks various transportation indicators: vehicle hours of delay, vehicle miles traveled and daily person trips. The report is intended to help members of the public and private sectors analyze the trends and challenges that confront the region.

- **The State of the Commute**

  The State of the Commute Survey collects information on commuters' travel behavior and attitudes toward commuting, traffic congestion, alternative travel modes, employer transportation programs, high occupancy vehicle lanes and demographic characteristics of commuters in the six-county SCAG region. This annual survey provides updated data and information for monitoring and assessing mobility in Southern California, a major category of the RTP regional performance measures.

CHAPTER 7: WHAT'S NEXT

Working Towards Long-Term Funding Solutions

In accordance with the regional emphasis of SB45, the objective of SCAG's proposed funding strategy is to create a predictable stream of revenue for new transportation projects while ensuring local/regional control over the prioritization of the projects.

- **Action Plan for Implementing Funding Strategy**

To realize the SCAG region's proposed transportation funding program, several activities must be undertaken. The following provides a list of some actions to be taken:

Figure 50: Funding Strategy Action Plan

Milestone	Action	Years
1.	Undertake a Region-wide, multiyear public awareness program to familiarize decision-makers with the issues being addressed in the RTP and the importance of the funding strategies to regional mobility, economic well being and the quality of life.	On-going
2.	Initiate one-on-one communications with state and federal legislators representing the region, to explain the long-term transportation requirements of the region and the funding options needed to address these requirements.	On-going
3.	Create a regional partnership involving SCAG, the County Transportation Commissions, the subregions and private interests to advocate the implementation of the funding strategies.	2003-2005

SCAG believes that these three elements provide the framework for a multiyear implementation program. The funding components of the program would likely be implemented over the next five to ten years and would require the formation of coalitions both within the Southern California region and throughout the state. Each funding proposal has its own set of conditions that will influence implementation. Recognizing this, SCAG proposes the following actions:

Join with the "self-help " counties and other groups to obtain authorization for a less than two--thirds vote requirement to continue the local transportation sales tax programs.

It should be noted that despite the two thirds vote requirement, some counties in the SCAG region are pursuing re-authorization. The process for pursuing reauthorization of the sales tax measure in the SCAG region would entail a series of important actions including:

Figure 51: Sales Tax Reauthorization Actions

Milestone	Action(s)
1	Establishing a Measure Renewal Committee
2	Campaign Finance
3	Marketing/Public Awareness Surveys
4	Expenditure Plan
5	Local Consensus
6	Ballot Measure by County CTC/Extension of Local Sales Tax

Development Mitigation Strategy

In coordination with the Measure I renewal effort in San Bernardino County, steps have already been taken to consider the feasibility of integrating a development mitigation program that would generate revenues for regional arterials and interchanges in San Bernardino County. Further study is required.

Adjust the fuel excise tax rate to maintain historical purchasing power. Further, maximize fuel tax revenue through pay-as-you-go and debt financing.

This entails the following actions:

- Development a state and regional consensus on a statewide and region funding strategy.
- Evaluate the merits of a regional gas tax/user fee measure and the institutional framework necessary to implement and manage such a regional program.
- Public education.

The above three activities should begin now because there are numerous technical and policy issues that must be addressed prior to introducing the tax/fee measure during the 2008-2009 period for imposition between 2010 and 2015.

Figure 52: Development Mitigation Action Plan

Milestone	Action(s)	Year(s)
1	Subsequent updates to the Regional Transportation Plan to develop blue-print program of expenditures	(2005-2009)
2	Develop state/regional consensus	(2003-2009)
3	Evaluate whether to pursue state or regional fuel tax initiative	(2003-2005)
4	Public education/outreach	(2002-2009)
5	Introduce legislation	(2007-2009)
6	Adjust the state motor vehicle fuel excise tax/user fees (or regional fuel tax imposition)	(2010-2015)

Pursue user-fee supported project financing for major regional investments where applicable.

The success of pursuing user-fee supported project financing for our proposed large scale projects including Maglev, regional truckways, and the rail capacity improvement program is predicated on the enactment of enabling statutes and administrative actions. Our initial evaluation of the proposed project-financing program identified three core objectives:

- ❖ Creating an institutional authority for project implementation and management,
- ❖ Facilitating access to innovative financing mechanisms, and
- ❖ Accelerating state and federal environmental review processes.

Figure 53: User Fee Financing Action Plan

Milestone	Action(s)	Year(s)
1.	Continue stakeholder meetings (regional, statewide, and national)	2003
2.	Initiate media and public outreach campaign	2003
3.	Develop state and federal legislation relating to institutional authority structure and financing mechanisms	2003
4.	Introduce legislation to stakeholders for discussion and input	2003
5.	Secure bill endorsement from local, state, and federal stakeholders (public and private interests)	2003-2004
6.	Secure state and federal legislators to introduce legislation and achieve enactment	2003-2004

- **Corridor Preservation**

  CETAP long-range corridors previously described in the unconstrained portion of the Plan are now constrained in the 2001 Regional Transportation Plan and are carried forward to the 2004 RTP. The Community Environmental Transportation Acceptability Process (CETAP) underway in Riverside County has led to the identification of four corridors (two intra-county corridors and two inter-county corridors). The ultimate goal of the CETAP process is the preservation of right-of-way to be used for a future transportation project. Ideally, the CETP effort in Riverside County will encourage other agencies to consider a similar effort.

  The first step in corridor preservation planning for the future is to identify potential long-range corridors and determine that there is a need to preserve them. This will require intergovernmental coordination and should include a funding component. Next, criteria to evaluate and prioritize the selected corridors must be developed. Once a corridor is selected, environmental studies will be needed. Traditional preservation techniques include purchasing land or using government statutes to place a corridor alignment on a general plan land use map.

  The SCAG Region is pursuing a new, environmentally sensitive approach to considering development. This approach envisions that the transportation options are originally developed with environmentally sensitive land uses and habitat issues being part of the planning and design criteria. It would involve early and active involvement by all stakeholders. The information sources for long-range corridors include:

  - various long-range transportation studies;
  - recommendations from Caltrans;
    transportation corridor projects expected to be operational after 2020;and
    informal discussions with public agency staff.

  In addition, the Southwest Passage is included to address the needs for preserving corridors to move goods and freight.

FISCAL IMPACT: No fiscal impact. Budget for the RTP Update work is included in the current budget.